AMIGA COMPUTING

January 91 Issue 32 £2.95

desktop video

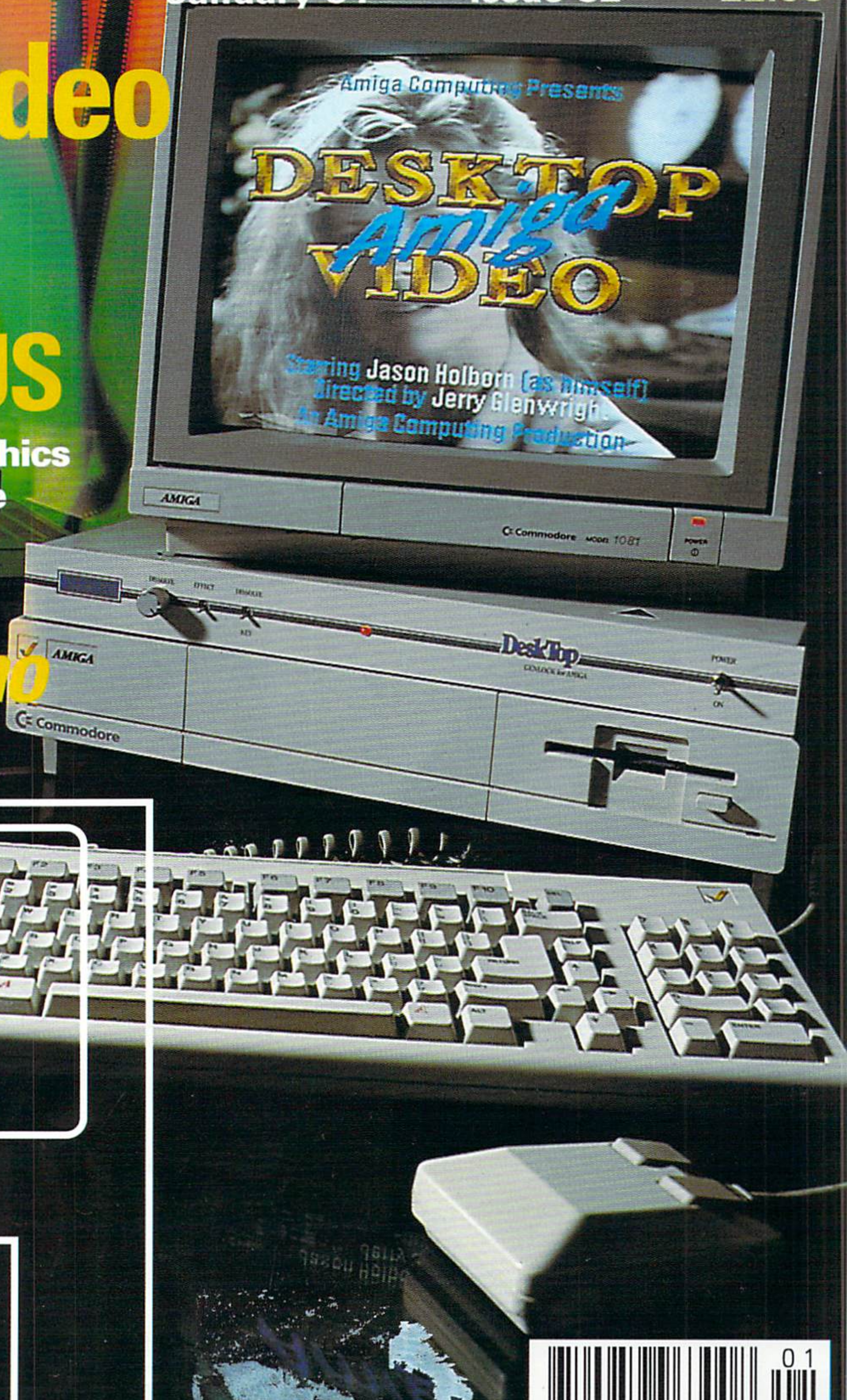
a trio of genlocks taken to task

Graphics-R-US

we turn the camera on graphics supremos Alternative Image

Commodore's Christmas beano

full report and pics



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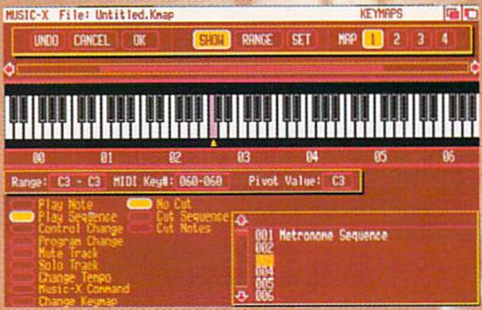
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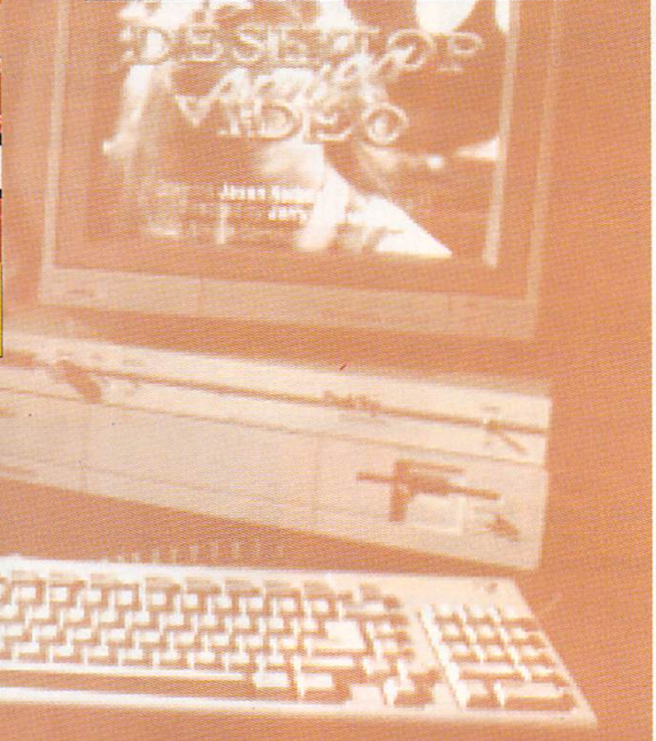
COVER STORY











This month's cover feature is al about desktop video, the process of mixing your favourite video images with Amiga-generated displays to provide a stunning visual extravaganza. What you need, where to go, what to do, it's all there starting on page 17

WHO'S WHO

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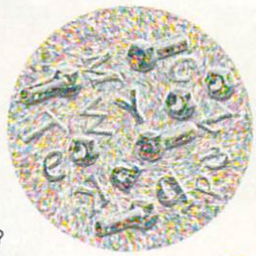
THE DISK

The disk that leaves all others with their electro-magnetic heads bowed. Every month, we present some of the best free software around and this month's no exception!

To begin with, we've got some fantastic network software which enables you to connect two or more Amigas and share programs and data between them. There's an unreal automatic telephone dialler and, following our visit to graphics supremos Alternative Image, a truly outstanding animated demo of a revolving computer-generated head that will leave you breathless. All this *and* a catchy revamp of an old favourite Christmas singalong - tune in and dance!

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GAMES

REVIEWS



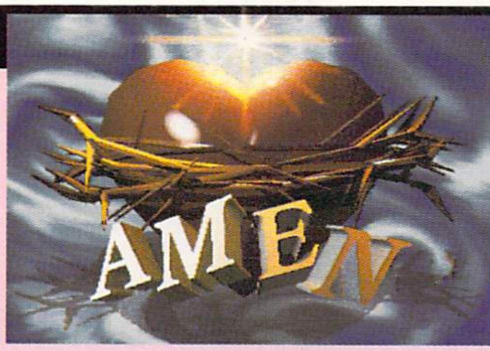
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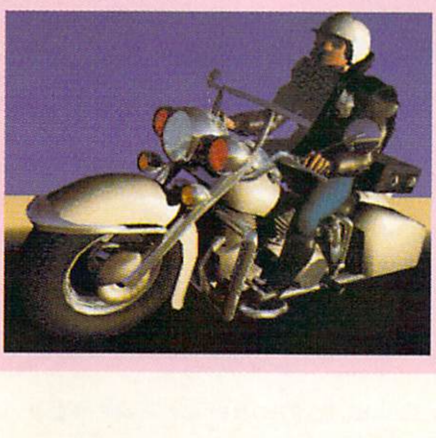
Something for everyone, every month in Almanac

GALLERY

And now, a visual treat in the shape of some of the best graphics we've ever seen in the long years of the Gallery.

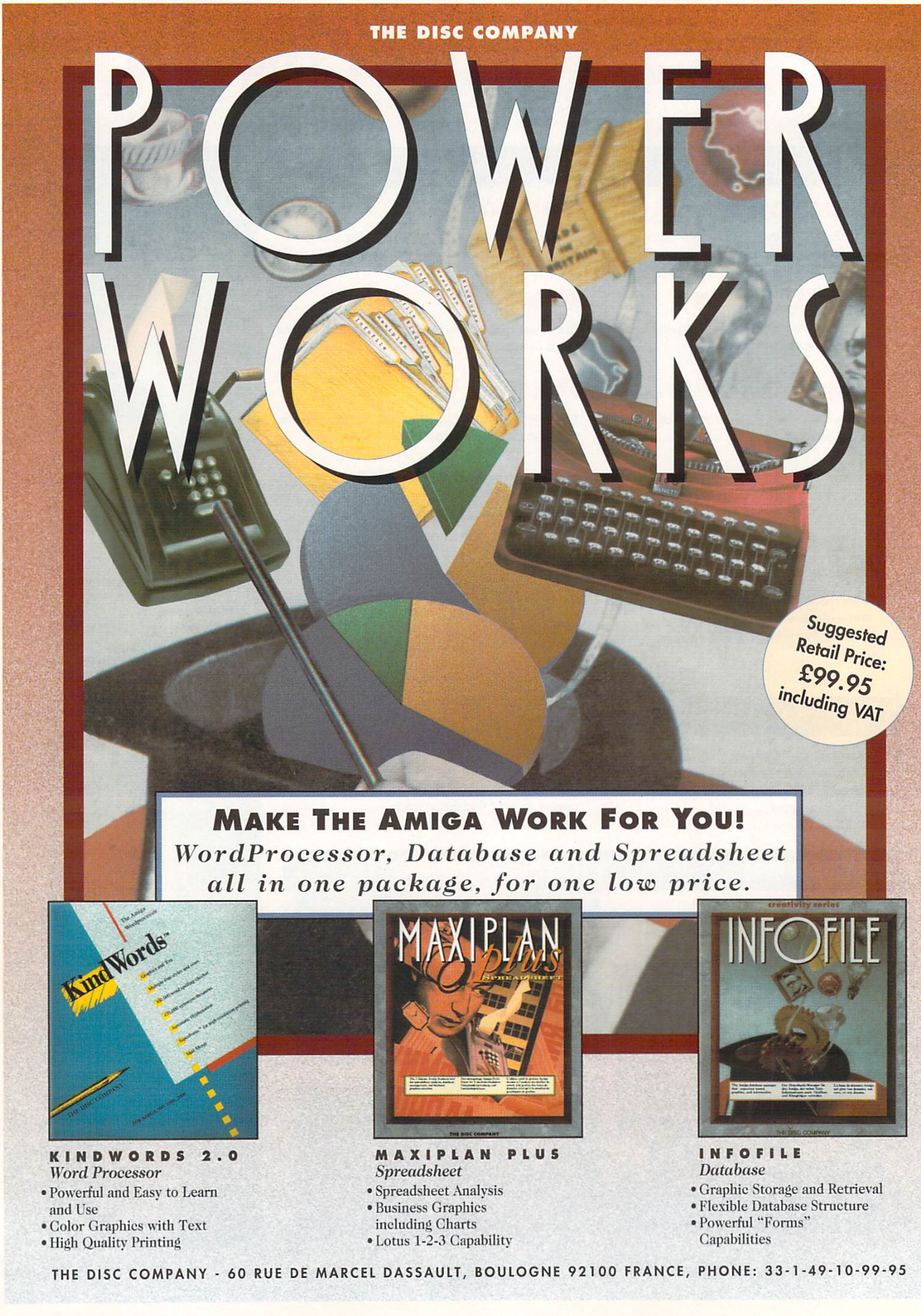
Strong colour, brilliant composition and an incredible eye for detail. *Turn to page 102 now*











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AMIGA people

AMIGA Computing has been named as one of the official UK sponsors for the prestigious European Computer Leisure Awards 1991.

It will be responsible for nominating UK entries in the Amiga categories and a senior member of staff will join representatives of other leading European computer titles for the final judging.

Linked to the European Computer Trade Show, the Oscar-style awards will take place at London's popular nightspot The Hippodrome on Sunday April 14, 1991.

Amiga Computing nominations will be for five non-games and technical excellence categories - Best Art Package, Best Music Package, Best Home Education Package, Best Home Productivity Package and Most Innovative Peripheral of the Year.

Other publications taking part in judging are TILT (France), Amiga Magazine (Germany), Det Nye Computer (Denmark), MikroBitti (Finland), Compupress (Greece), Amiga Magazine (Italy), Mega Ocio (Spain), Dator Magazine (Sweden) and Amiga Nieuws (Holland).

Also involved in special awards are Compute! in America and Log-In of Japan. In all, the publications involved have a combined worldwide readership of eight million.

The European Computer Trade Show '91 takes over London's Business Design Centre from April 14 to 16. Yet again, it is destined to ➤



Business Design Centre, home of the European Computer Trade Show

WHAT'S new

TRUE FAMILY COMPUTER

BILLED as "the first true family computer", the latest offering from Commodore is the Amiga 1500 Personal Home Computer. Based on the A2000, it has two floppy drives instead of one floppy and one hard drive, but the loss of the hard drive is compensated for by an attractive bundling deal.

For a price of £999.99, which is cheaper than an A2000, it includes wordprocesso,r database and spreadsheet package Platinum Works, paint and animation program Deluxe Paint



The new Amiga 1500

III, top games Populous and Sim City, flight simulator Their Finest Hour and cerebral offering Battle Chess. Two Amiga books are also included in the bundle.

Commodore are aiming the new 1Mb machine at the whole family, intending it for both games and business use in the home. They predict that more than a quarter of a million homes will have an Amiga 1500 in the next four years.

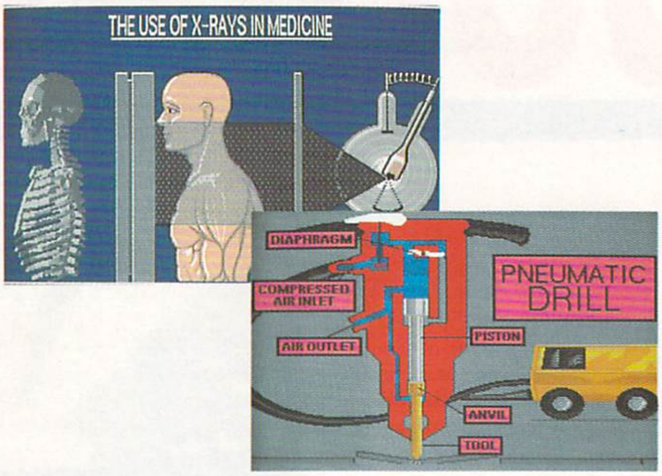
"Commodore recognises the importance and growth of the family market and with the Amiga 1500 has developed a machine that addresses the needs of all members of the family", said managing director of Commodore UK, Steve Franklin.

"Commodore computers now touch people in all walks of life, from the home to school and

AMIGA people

➤

be a major launchpad for Amiga products. Big names already signed up include Ocean, Mirrorsoft, US Gold, Virgin Mastertronic, Electronic Arts, Impressions, Microprose, Psygnosis, CDS Software, Domark and Arc Software.



MULTI-MEDIA COMPARISON

WHEN the news of Commodore's CDTV first broke in America few people in the UK knew that two Amiga people from Britain were already playing an important role in its software development.

From the very first developers meeting in Los Angeles through to private demonstrations at the giant CES shows in Las Vegas and Chicago, Lee Gibson and Kevin Stevens have been working closely with Commodore US for 12 months.

The success of CDTV will depend on the quality and quantity of available programs, but their development is a complex business. Lee and Kevin have come up with a practical solution and have now decided to talk about it.

Their company is Digigraphic (0455 558855) and the result of their year's work is Living Book Publisher, an innovative answer to the needs of multi-media development.

Itr differs from most multi-media development systems such as Amiga Vision because it is more than a compositional tool, being a complete production system from story boarding through to final product. It allows a fully interactive book to be developed from start to finish within a single environment.

Lee started Digigraphic in 1986, to be joined by Kevin six months later. They already had a number of creative Amiga packages under their belts before CDTV emerged, including Prosound Designer, Pro Midi Plus and Video Magic.

"We now feel the impetus for CDTV/CDI is irreversible, and due to our broad base development experience are directing Digigraphic towards that emerging market", said Lee. "We also feel the time is right to talk about our major development work in this area.

"The problem with development of this kind is the lack of support from good software. The system we have put together is the first complete environment from start to finish.

"In December 1989 we flew out to Los Angeles under invitation from Commodore US to the very first CDTV developers' meeting to talk to US developers ands publishers about our work in the areas of software motion video for CDTV.

"Our programming department spent six months researching motion video before the CDTV was a twinkle in anyone's eye".

Following the Los Angeles meeting, Lee, Kevin and their team produced a multi-media demonstration which was shown to a selected few at CES in Las

➤

WHAT'S new

through to the workplace. This ubiquity is a vital part of our long term strategy - to provide computers for life".

In addition to the speed, colour, sound and graphics features needed for a games machine and Amiga Dos environment for business applications.

The 1500 will also run industry-standard MS Dos applications by the addition of an AT or XT bridgeboard. It is expandable to 9Mb.

Based on a 16/32 bit Motorola 68000 chip running at 7.14MHz, the 1500 has eight expansion slots for both Amiga and PC options plus parallel, serial, video, audio and mouse interfaces as standard.

CHECKMATE

OWNERS of an A500 who want to treat themselves to Checkmate Digital's A1500 conversion kit can take advantage of a special offer which reduces the cost of the kit from £230 to £199.

Checkmate Digital's James Campbell described the offer as "a special Christmas treat". It runs out soon, so Amiga buffs wanting to expand their A500s will have to act quickly.

For those who can't afford the complete kit, Checkmate Digital (071-923 0658) are also offering the separate keyboard element for £59.

It allows the A500 keyboard to be lifted out of the machine and includes twisted cable and blanking plate which slots into the space where the keyboard used to be.

"It immediately gives you a separate keyboard for your existing machine", said James. "In the future, if customers want to buy the full-blown system, they just send in their keyboard invoice and buy the rest at a 20 per cent discout. It's a useful two-stage way to buy the system".

HIGH RATE SAMPLING

TRILOGIC (0274 691115) has produced a new version of Audiomaster including Audio Engineer, which can sample at very high rates using up to 8Mb of memory.

It also includes a CD player simulator which can play up to 70 sequences of samples in any order.

New software developed in

Distinctly Digita



Cleverly written and always favourably reviewed in the press, Digita produces a range of powerful, low cost software for the home and business user.

DGCALC

The fastest and most powerful spreadsheet available in this price bracket, with 512 rows by 52 columns, giving you up to 26624 cells. As with all Digita products, the operation of the program is clearly thought out. Being either menu, mouse or command driven you'll be able to start using it within minutes – even if you've never used a spreadsheet before. Some of the features which make it such good value are the exporting of ASCII files for integration with other programs, adjustable column width and text overflow, programmable function keys (macros), and a unique windowing facility, so that you can look at different parts of a sheet at the same time.

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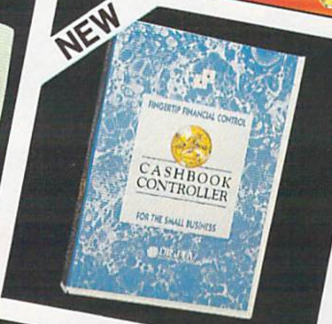


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AMIGA people

Vegas, then to Commodore's leading lights Gail Wellington, Nolan Bushnel and Irving Gould at CES Chicago in June.

To coincide with the launch of LBP in March, Digigraphic have also produced the first application on the subject of technology. The working title is Everyman's Technology Living Book, but for sexist reasons, they are thinking of changing the name. Its launch is timed to show just what the LBP system can produce and there are seven more programs in the pipeline.

This first Living Book covers many aspects of technology, including communications, entertainment, industry, medecine and the military.

Features used in the Living Books include graphics, computer animation and full motion video of any size and display mode, contents and index pages, a comprehensive searching system and a narration facility to read out pages aloud.

Then there's a magnifier for users with impaired vision, unlimited video animation and audio length, electronic bookmarks for easy movement between references and "hot words" which can be selected for cross reference.

Digigraphic will licence the publishing system and will also continue with their own application development on it. Pricing has yet to be agreed.

KONIX CRASHED

AS Amiga Computing went to press, receivers Peat Marwick McLintock were just days from making an announcement on the future of failed joytick firm Konix, which fell into receivership at the beginning of October.

A number of companies are believed to be interested in buying the company, one of which is Spectravideo which have been marketing Konix products for the past year.

"There are five or six other people looking at it at the same time as ourselves", confirmed Spectravideo boss Ashwin Patel. "The company is up for bids and the price is in the hands of the receivers. There is nothing concrete on who will get it and no figures have been mentioned, but we expect some further news very soon".

A spokesman for Peat Marwick McLintock said there had been a lot of interest in the company and that negotiations to sell off Konix were in an advanced stage.

Konix went into receivership on October 2, reputedly owing in excess of £1 million. Partly to blame for its failure were heavy development costs on its new Multi System games console which never reached the market

BIG KIDS

OLDER Amiga kids may still go for the shoot-em-up fun of the more violent games but there is still a market for younger computer children who have not lost their interest in the traditional colouring book.

That's the opinion of Trevor Scott from I-D (0207 71417) who is now selling a range of computer colouring books for the Amiga from Dallas-based Merit.

Trevor has field-tested the Merit colouring packages with under elevens in this country and found them to be very popular - a fact backed up by sales of more than half a million in America.

"There are few companies in the UK who have successfully addressed the under elevens market", he said. "These colour packages are something a little different. As well as being educational, they are extremely entertaining and most important of all, they are easy to use".

There will be seven packages in the series. Due to be launched the week after Amiga Computing went to press, the first is based on the current Turtles craze. It will be followed in January by three offerings from Sesame Street complete with Big Bird and other colourful characters.

Running through to Spring, titles will be released at monthly intervals and will also include Dinasaurs Forever, At The Zoo and All Dogs Go To Heaven.

Using the packages is a simple

WHAT'S **new**

Britain is provided free with the sampler for an inclusive price of £39.99. Audiomaster 3 costs £89.99.

NEW HARD DRIVE

AS an addition to its GVP range, Power Computing (0234 52207) has launched a new hard disc drive for the Amiga 500 which uses the new series two controller. With a completely fresh slimline style, it fits snugly beside the Amiga and offers an impressive turn of speed.

The new drive comes in 20Mb version fo £499, 50Mb version for £599 and 80Mb version for £849.

Also new from Power is a two inch internal hard disc for the 500. As Amiga Computing went to press, the price of the new hard disc hadnot been fixed

CUT-PRICE PHOTON PAINT

YOU'VE all heard of Star Wars, but what about Paint Wars? Over at The Software Business, Jeremy Cooke is ready to do battle with a New Year resolution to hit Electronic Arts' Deluxe Paint 3 head on by pitching the latest version of Photon Paint at the same price.

While full details of Photon Paint 3 are not yet available from Microillusions in America, Jeremy confidently predicts: "It will be the most superior paint package on the market".

Extensively re-written by a Canadian development team, the main claim to fame of the new package is that it will work in both Amiga resolution and Ham.

"It is the natural successor to Photon Paint 2", he said. "Originally it was intended to be in the UK by the middle of December but with design work still to be done on the packaging, we will probably have it on the market by the end of January or early February.

"We intend to pitch it directly against Deluxe Paint at £79.95. We sold Photon Paint 2 at £89.95 - £10 higher than Deluxe Paint which we thought was the right decision since we had a superior product. This time, we'll hit Deluxe Paint head on".

Having recently released version 1.1 of Microillusions' Midi sequencing system Music-X, The Software Business (0480 496497) is already setting its sights on version 2,but it could be a year away.

AMIGA people

point and click exercise. Children select the colour they want from the screen pallette, move to the area they want to colour and click. A mix facility gives them more than 200 colour to choose from, there is a print-out facility and the programs are backed up with information leaflets. Price, £19.99.

BUCKETS AND SPADES

"THE problem with Cumana is that we never have time to sit with buckets and spades. No time for holidays", says the company's marketing manager Steve Dickenson.

Well-known in the Amiga world, Steve joined data storage specialists Cumana in April 1989, and his workload reflects the success which Cumana has enjoyed since it was founded by managing director Don Bolton in 1979.

At a time when interest rates are biting and many employers are shedding jobs, the people at Cumana are actively seeking more staff to take advantage of the strong growth in exports to France, Italy, Germany and Scandinavia. From that record, their evaluations of the market and their views of the future are worth investigating.

Along with moves into the PC world and investment in CD Rom drives, Cumana remains a staunch supporter of the Amiga, with new products coming thick and fast.

All the company's new drives, including Winchesters and opticals, are adapted for use with Commodore machines, and looking into the future, Don sees the industry creating a new market for optical storage devices.

"Cumana will drive part of this market with new fast read-write drives", he said, "but ordinary magnetic media will be here for some time yet".That's looking further into the future, but Steve has revealed some of Cumana's more immediate plans.

Following the launch of the COM201 board featured in October's Amiga Computing, there are plans for a smaller version. The COMN 201 gave A500 users an MFM ST506 hard disc interface as well as 512k memory expansion. Just half the length, its successor the COM202 will come in two versions.

COM 202 version A will offer half a megabyte of ram alone and version B will give half a megabyte of ram and realtime clock.

"What we have done is to make COM202 smaller", said Steve. "There is no controller interface, only ram and realtime clock. We hope to have it on the market by January. The price has not yet been fixed".

Also in the future is COM203 for the Amiga 2000, a full-length card complete with SCSI controller. There will be four versions – an unpopulated one with SCSI and no ram, and three others offering 2, 4 and 8Mb of ram.

Along with more expansion boards for the Amiga range and CD rom drives for Commodore machines, this wealthof new product is evidence of Cumana's stated confidence in the future of the Amiga market.

"A few years ago we had very much an Atari sales base, but now it is just the other way round in favour of the Amiga", said Steve.

CDTV RENTAL

COMMODORE have confirmed that a rental scheme for their CDTV (Commodore Dynamic Total Vision) is among a number of avenues being explored for when the new system hits the market.

They are negotiating with High Street rental companies for an arrangement which will allow customers to enjoy the educational and entertainment capabilities of the interactive system without have to shell out the £700 purchase price.

CDTV is currently undergoing massive field trials with 2,000 machines placed in homes, businesses and schools for three months. It will probably hit the market in April. If the rental system goes ahead, charges could be between £25 and £30 a month, according to trade sources..

WHAT'S new

(P)American development recluse David Joiner is presently working on CDTV projects for Commodore so has had to shelve Music-X 2 for a while. One bit of information filtering across The Atlantic is that it will feature a front end notator.

Due for a spring launch by The Software Business is a new fractal landscape generator which will go under the grand name of Genesis - The World Creator.

Genesis is nearing completion in the States and is awaiting work on the manual.

A useful tool for Amiga owners who want to create landscape graphics for their own programs, it enables them to plot pixel points on screen, produce valleys and mountains and combine them into a whole landscape.

GREAT T-SHIRT RAID

Retailer's Heaven would have been a fair description of the Commodore show, with the assembled spending money hand over sweaty fist, as the box-shifting community scrambled to relieve the punters of their hard-earned.

But did we say Heaven? In the case of Dowling Computers, make that Heaven with a double helping of Paradise bolted on for good measure! The company's contribution to the Christmas spirit consisted of opening up Amiga Screen Gems bundles supplied by commodore removing the T-shirt which Commodore supplied as a little extra surprise for the already deliriously happy new owners.

Because of the lack of detail concerning the contents of the Screen Gems bundle, it was a relatively simple operation for Dowling to remove the sticker and rip off the punters by selling the T-shirts contained therein at massively inflated prices - a reported price of £15 being asked for a T-shirt which should have been free. A time of giving? Bah, humbug!

Mr Andrew Ball head of press and publications, and official spokesperson for Commodore said "Commodore does in no way support the action taken by Dowling Computers." Mr Ball went on to mention that although the action was not strictly illegal, it was however morally wrong, and if Commodore was in a position to take legal action, which unfortunately they weren't, they certainly would have done so.

Commodore's Christmas beano

Venue for box shifting, or important Commodore showpiece? Paul Austin and Stevie Kennedy mingled with those quick to hand over their cash...

Commodore has already launched its big surprises for this year, and the third-party manufacturers didn't promise to make too many hearts flutter. With this in mind, we scoured the show for new stuff and found it all rather more interesting than it had first appeared.

At long last Commodore has seen fit to throw its weight, and indeed cash, into the Amiga music scene. To aid the company in this noble quest, it's joined forces with Roland, a long established member of the music industry. In order to promote this new venture, the partnership has signed up a new band of fresh-faced young popsters, called The Jazz Amiga to wave the corporate flag.

The band's name is a bit of a coincidence and it's not entirely unconnected with their being sponsored by Commodore (they were formerly known as Juvenile Jazz). The change of name is, of course, entirely of their own volition, and nothing to do with Commodore forcing a financial arm up their back or anything like that. Honest.

Unfortunately, there's no doubt that in the long run the band will - probably - regret the decision. Credibility is worth it's weight in gold disks as anyone in the music biz will tell you (just look at Bucks Fizz. They couldn't possibly have made all that gelt if they hadn't had street credibility by the bucketful, right kids?), and such obvious bottom kissing doesn't do a lot for your credibility.

So much for the free A/R advice, what were these young musical funsters like? Well, the marketing manager of Commodore should not be the happiest man on the planet. During the press briefing hacks were informed that the 'boys' would not be playing live due to a lack of ahem, space. After casting a critical eye over the rather amateur video provided as a replacement, we were not impressed.

If the Amiga is to be sold as an equal, indeed a superior to the ST, which given the software it will be, The Jazz Amiga will do nothing for its cause, if the music they provide is to herald the Amiga's entry into the music industry.

To be fair to the boys in the band, they are not entirely to blame for the rather sad state of affairs. Given a couple of years they will no doubt be a reasonable 'act'. They have simply had a large carrot dangled in their faces a little too early in their careers.

On a more positive note, the partnership between Commodore and Roland has got to be seen as a great move for the musical development of the Amiga. In order to promote this new initiative, Roland has produced a new package of instruments which includes the PC-200 MIDI control keyboard, CM-32L sound module, plus software and even matching speakers. A full review of the equipment and supporting software should be in next month's issue.

The next big launch at the show was Commodore's new advertising campaign which features two glossy adverts. The first consists of an aboriginal tribesman who, for reasons best known to himself, throws his boomerang over a cliff and then proceeds to blindfold himself prior to patiently awaiting its return. When it does, the noble tribesman casually catches his weapon a split second before it would have removed a large portion of his skull. If anyone out there can relate this scene to a computer you're a better man or woman, than me.



Lay down your joystick . . . you have fifteen seconds to comply

The second ad is to be used exclusively in the cinema, and features another tribesman leaping off a 270 foot bamboo platform, in a desperate attempt, one can only assume, to escape the boomerang. The press release informs me that the campaign is an attempt to break free from the usual format of computer advertisement – it certainly does that.

Anyway, Commodore has certainly made a bold move in the musical field, and we can only hope that, despite The Jazz Amiga and the ads, that it's a huge success. The more Amigas out there the better.

Earth calling Commodore

The actual Commodore presence at the show was a little thin on the ground, with a somewhat sparse selection of the company's wares on display. This consisted of a few Amigas, and the games console, which strongly resembles a large plastic Victory V with a cartridge stuck in to it.

There was no sign of the mythical CDTV which, if rumours are to be believed, would have made the trip worth while in itself. The general atmosphere was somewhat similar to that of a car boot sale, which considering the time of the year, is somewhat

inevitable. It would be fair to say that the show was more for the box-shifters and bargain-hunting punters than for those interested in new product releases,. But there were enough goodies on show to excite the average compu-junkie's pleasure centres, and chief among these were one or two rather tempting pieces of hardware. Solid State Leisure's A5000 accelerator board made its much- heralded debut on a stand which was otherwise sparse in the extreme.

Due to a last minute production hitch, it was found that the unit had problems with some hard drives, and the resulting delay meant that all A5000s coming off the production lines were being boxed and dispatched to clamouring customers before the solder had cooled. The only reason there was a unit on display at all was that it had been found to be faulty at the quality checking stage. The assembled finally given a glimpse of the fully finished product on the second day of the show.

The amount of interest the stand attracted despite its appearance, is a testament to the mouth-watering performance offered by the A5000. Utilising a 68020 chip running at 16.67Mhz and 1Mb of 32-bit RAM, the standard model costs £399, and if that sounds expensive, then consider that for the price you are upgrading your A500 or 2000 to something approaching an A3000.

The company claims for example, that the accelerator will do four hours of ray-tracing in only 45 minutes, and that's without adding the optional 32-bit 68881 maths co-processor. With a standard 16Mhz 68881, it's claimed that this is reduced to only 14 minutes. As the top of the range model with 68882 co-processor and 4Mb of 32-bit RAM is an almost-affordable £1039, the A5000 threatens to become the most desirable add-on the Amiga has had anywhere near this price.

If it lives up to its promise, the A5000 should revolutionise the way the A500/2000 is used in all maths-intensive areas such as 3D graphics, ray-tracing, DTP, and even the latest applications in virtual reality. Look out for a full review soon.

Multi-tasking PC?

Another interesting launch was the Vortex Amiga version of the ATOnce 286 PC emulator. Claiming to be a '286 on a board', the ATOnce was a rave success on the ST and looks set to enjoy the same success on the Amiga. Again, the price will make the man in the street cringe a bit, but for £199 (or £249 if you don't already have MS-DOS) you get a lot of computing power.

The board sports an 8Mhz 80286, which should out-run most other PC emulators and claims to be fully multi-tasking with the ability to use all available RAM as either expanded or extended memory. It also offers several display options and full use of all Amiga hard drives. It will also auto-reconfigure the mouse, parallel, and serial ports to their MS-DOS equivalents, allowing PC hardware to be plugged in.

For the moment, these are claims we haven't been able to fully test ourselves, but the board seemed happy enough running Windows 3.0 and Microsoft Word on the Silica Systems stand. Rest assured that a full review is on its way as soon as we can get our grubby little hands on one.



This certainly makes my stylophone look a bit sad

Nuts 'n' bolts

On a less technical note, the final production version of the A1500 made its first appearance. Up until now, the unit had been prototyped and then sold by Checkmate Digital. However, a dispute has arisen as to whether or not they had any right to sell the A1500 in the first place and a new company, A1500 Ltd, is now selling it while injunctions fly back and forth between the two.

For those who missed our review of the A1500 a few months back, it is an add-on which turns your Amiga 500 into a sexy system box and separate keyboard, then enables you to slot in a hard drive. Further expansion options are available with the Dual User Configuration (DUC) board, making it possible to mount, for example, a flicker fixer, a hard drive, and a second floppy internally. The unit offers several improvements over the prototype, and full details of these can be found in this issue's update review.

Desk top video (DTV) is, at the moment, one area in which the Amiga triumphs over all comers, and there were a few interesting bits and pieces around at the show. Marcam was showing off its newest genlock, the Super 8802. Based on the flagship 8802, it adds S-VHS compatibility and hardware controls for fades and wipes, and is set to compete with the G2 Video Centre. The Super 8802 will retail for about £550, and the good news for existing 8802 owners, is that they will be able to upgrade their systems for about £350, although Marcam stresses that these prices are still provisional.

Spanish truckers' dispute delays ensured the hardware was not entirely ready, but Marcam assures us that the unit on show was complete in just about every respect except the knobbly bits, and was performing exactly as will the finished unit. The S-VHS quality certainly was impressive, and playing about with the slides gave gratifyingly wipey and fadey effects, but for the final word and a comparison with the G2, you'll have to watch this space.

Silica Systems was showing Videocomp's Video Effects System Two (VES 2), offering Digi-View Gold, genlocking, video titling, and an RGB splitter in one integrated package. It looks like a worthwhile attempt to deal with all your DTV needs in one package, using existing and new products, but we didn't get a close enough look at it to judge how close it came. Look out for it in future issues.

On the video software front, we saw two fantastic new packages. Amiga Centre Scotland was showing off its Broadcast Titler 2 package from InnoVision Technology.

It promises 320 colours per screen, 16 anti-aliased fonts without a jagged edge to be seen, multiple screen effects such as wipes, flips, and tumbles, text scrolling, random access to 600 pages, a selection of backgrounds, and many other goodies with which to produce client-pulling presentations and video professionalism.

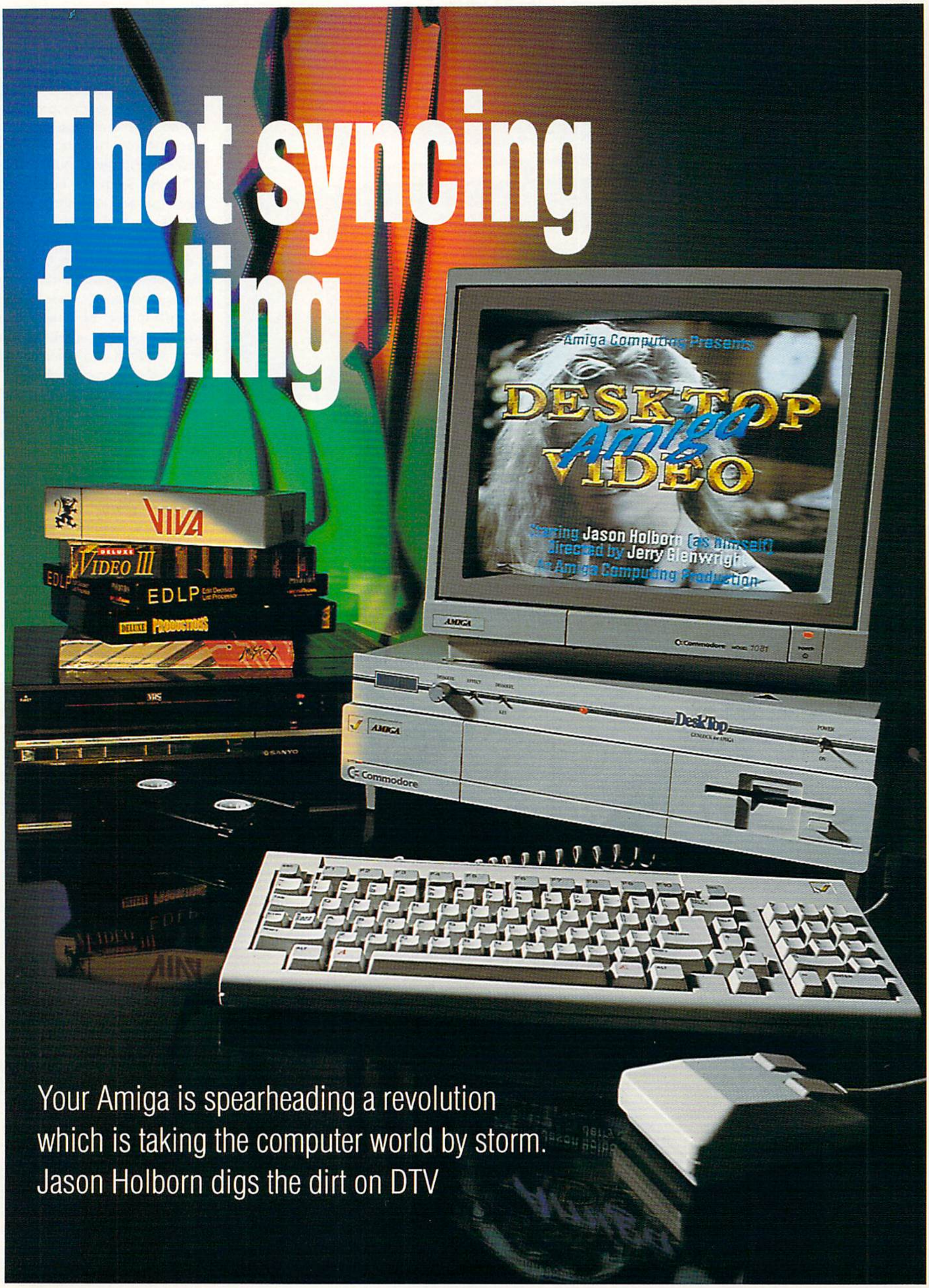
The demo we witnessed was going through what looked like a CBS American Football programme, and appeared to be smooth enough to coat a frying pan. More on this next issue.

All in all then, a worthwhile show, and a relative success despite Commodore's apparent attempts to dispense cold water from a great height.

The Commodore stand was subdued and without new products, there were very few representatives around, and enough has already been said of The Jazz Amiga. On the other hand, the linking of Commodore's name to Roland was a smart move which can only boost the Amiga's standing with the music industry, and third party launches were of sufficient number and quality to generate a buzz of sorts.


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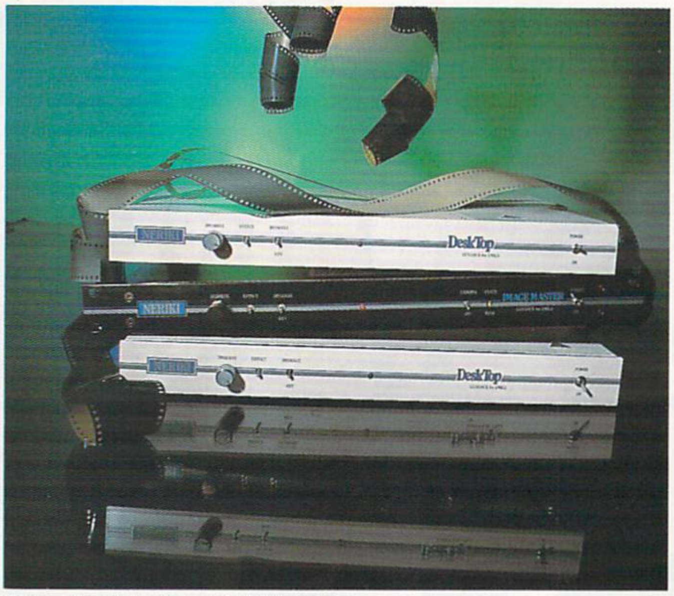


Your Amiga is spearheading a revolution which is taking the computer world by storm. Jason Holborn digs the dirt on DTV

Sitting on your desk is one of the most important developments in video technology since the arrival of the domestic video recorder. Since its release back in the mid '80s, this wondrous device has revolutionised video post-production, bringing the power of a £100,000+ video studio within the reach of the person in the street. That device is none other than the Amiga.

Throughout the world the Amiga is recognised as the number one choice for the discerning video engineer. You'll find Commodore's baby in some of the most advanced video studios around, happily rubbing shoulders with equipment costing tens of thousands of pounds.

Indeed, chances are that much of what you see on TV and at the cinema has been produced with a little help from the Amiga. All pretty heavyweight stuff, but that's not to say that desktop video is only for the pros – no siree, you too can get in on the action with little more than a low-cost genlock and a bit of decent software.



Each genlock is housed in a tasteful, slim case

You've probably read endless articles about desktop video in other publications, but few seem to have addressed the subject from the point of view of the average home user. After all, very few of us could afford such incredible devices as video mixers and time base correctors. The aim of this article then, is to discuss the possibility of DTV for the masses (and that means you! – Ed).

What is it that makes the Amiga so special? Why aren't machines such as the PC and Macintosh stealing the limelight? After all, the Amiga's graphics capabilities are now no longer regarded as state of the art. Both the PC and Macintosh offer higher screen resolutions and larger colour palettes, so it would seem only natural that they're better qualified for the job.

As always though, looks can be deceptive. Hidden away within the Amiga hardware is a little piece of circuitry that makes the Amiga a natural for video work. It doesn't matter how flash your video hardware is, without this little slither of silicon your computer will be something of a none starter.

Without getting too technical, this bit of circuitry allows the Amiga to synchronise itself with an external video source – in the case of desktop video, a genlock. And as you'll learn later on, synchronising is the all-important factor, a case of sync or swim (!) Even today the

A typical Amiga DTV setup

Getting into desktop video needn't be expensive. OK, if you're intending to use your Amiga for professional applications then expect to write out some pretty hefty cheques, but otherwise you need little more equipment than that which you already own.

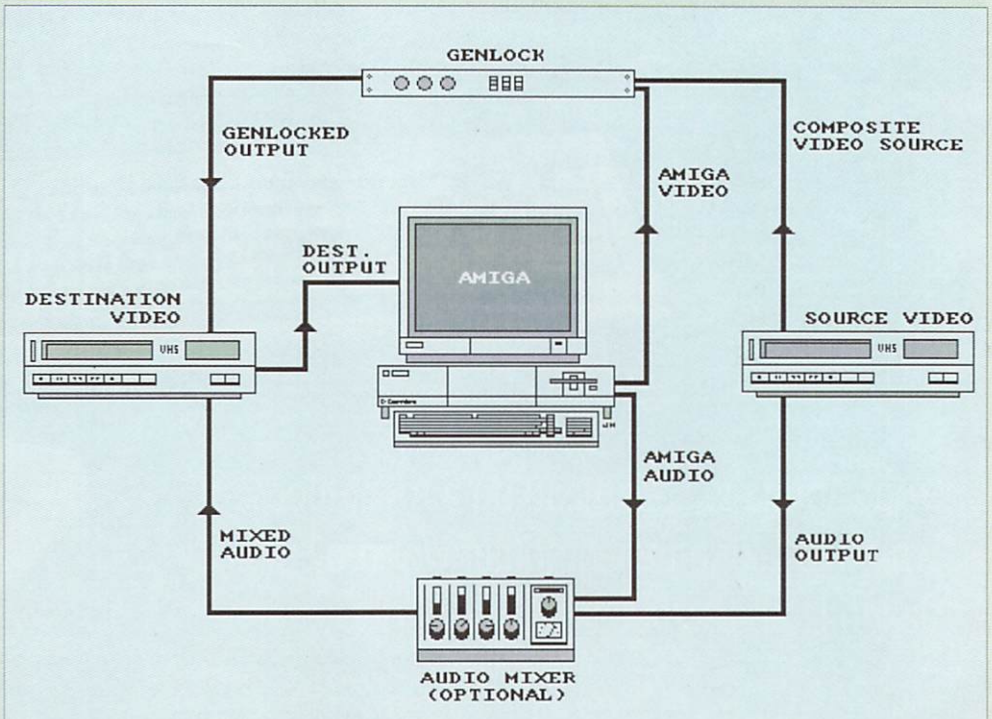
The diagram on the right shows a typical home DTV setup – it's about as simple as things get, so don't expect to produce the kind of results that you see on the opening credits of Wogan. The heart of the system is obviously the Amiga, but the genlock is the device that does all the hard work.

Note that you actually need two videos – one to play the source tape, and another to record the complete genlocked output. As an option, there's also an audio mixer in there.

One of these will set you back as little as £40, so it's well worth investing in one just so it's there if you need it. The Amiga supplies the sound in this set-up, but it's also perfectly possible to connect up MIDI devices such as synthesisers and samplers to get truly professional sounding results.

You may have also noticed that the Amiga monitor is connected to the output from the destination video.

This is necessary if you wish to view the mixed video signal. Most monitors will take a composite signal, so just connect the destination composite output to the appropriate input on your monitor and you'll be in business, if you're using a Commodore monitor, then you'll also need to set the monitor to CVBS mode by pressing the video mode button hidden behind the monitor's front panel. TV modulator users will have to use the RF output from their videos instead.



Software Scene

We've already mentioned three or four packages which are ideal for desktop video, but there are so many more that will also fit the bill. Here's a quick run down of the best.

• Deluxe Paint 3. The acclaimed paint system from Electronic Arts is a must for every desktop video engineer. It can be used to prepare just about all your graphic material, both static and animated. If you can afford only one package, then this is the one to buy.

• Deluxe Video 3. The companion product to DPaint, DVideo 3 is a powerful presentation system that can handle graphics, animations, music and sampled sounds.

All operations are carried out from within a nice user-friendly environment, so constructing professional-looking presentations is an absolute doddle.

• TV*Text Professional. Definitely the best video titling package currently available. Will use both colour and mono Amiga fonts. Even mono fonts can be 'tarted up' using TV*Text's extensive font rendering tools.

• Music-X Junior. Music-X Junior is ideal for adding MIDI and Amiga sound to your video productions. At current prices, you can pick it up for as little as £50!

• Elan Performer. A simple to use yet powerful presentation package that can handle both static and animated graphics. Perhaps not as powerful as DVideo 3, but still worth investigating.

• AMOS. Yes, AMOS can indeed be used for desktop video. Now that it's been fixed to work with genlocks (you'll need versions 1.2 upwards), AMOS is ideally suited to desktop video. Smooth scrolling, full IFF support, sampled sounds, interrupt-driven music, what more could you ask?

• Frame grabber. A video digitiser is well worth investing in. If you can, go for a real-time video digitiser (Rombo's VIDI-Amiga is a good bet). Imaginative use of the video digitiser can produce some stunning effects.

For off-line digitising, NewTek's Digi-View is also a good digitiser to own.

competition is only just starting to get its collective desktop video acts together – Atari has since built exactly the same external syncing options into the STE, so it should be only a matter of time before Atari owners can also get into desktop video.

If the STE is to match the Amiga, however, Atari has got an uphill struggle on its hands. The Amiga has been around for nearly five years now, so Amiga developers have had time in which to perfect their skills.

Of course genlocks are available for other machines – the PC, Mac, Archimedes and ST all have them – but the Amiga still remains the best bet in terms of price and performance. Not only are Amiga genlocks better equipped, but they're also considerably cheaper. Only on the Amiga can you pick up a genlock for under £100!

Another good reason why an Amiga is the videophile's choice is the flexibility of its screen display hardware.

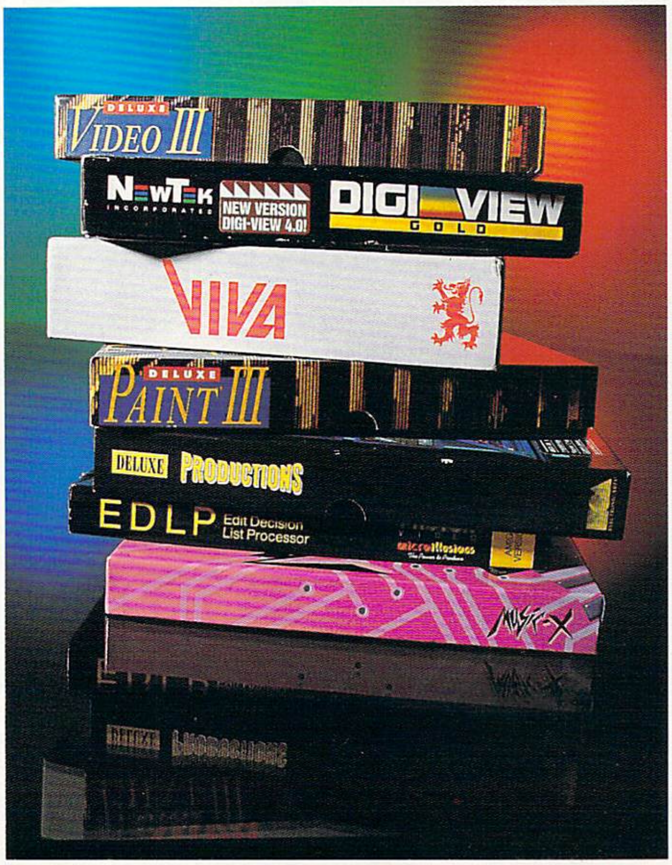
Interlacing may do terrible things to your eyesight, but it was deliberately built-in to make the Amiga video output more compatible with video equipment.

Then, of course, there's also built-in overscanning, so Amiga graphics fill the entire screen – something that even today most of the competition can't manage!

The heart of any desktop video system is the genlock, which is a sophisticated device that can combine two or more incoming video signals into one. By treating a particular colour as transparent – usually colour 0, although more expensive genlocks will allow you to change this – the genlock replaces all occurrences of that colour with the secondary video source. The computer's signal is treated almost as a stencil which is laid on top of the secondary signal. You'll find genlocks in use constantly on TV – for example, genlocks are used to overlay English subtitles on to foreign films and so on.



Neat and tidy outlets make connection a breeze



A selection of the best grabbing software available

The Amiga certainly isn't starved of its fair share of genlocks. Depending upon your particular requirements, you can pick one up for as little as £100 or as much as £1,000 plus.

If you're serious about using your Amiga for desktop video, then it's probably worth shelling out a bit more cash for a genlock with a few more features. Later on we'll be taking an in-depth look at three genlocks from Neriki, all of which are ideal for serious desktop video.

Source signals

Once you've got your genlock all plugged in, you now need a source signal. This can come from just about any device that outputs a composite signal – anything from a domestic video camera to an expensive video-disk player, or even another Amiga will do, as long as the signal is composite. For most of us though, the source signal will usually come from a video recorder. Most people now have at least one VCR to their name, so this medium is ideal.

Many seem to think that you can store a desktop video presentation on a floppy disk. This just isn't true – the Amiga has nothing to do with the process of genlocking, it merely provides the video signal which is superimposed over

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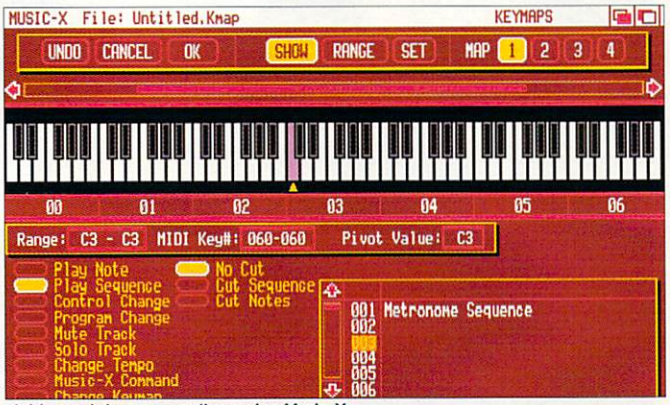
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the secondary video signal. You can of course keep all your Amiga generated graphics on disk, but if you wish to 'store' the complete genlocked presentation, then the only way is to record it onto video tape.

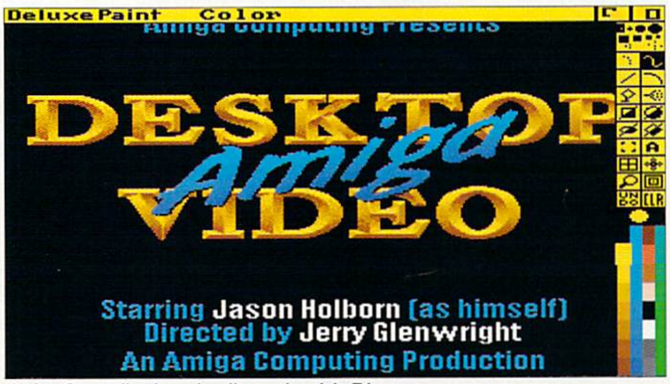
As you've probably already guessed, this is impossible with just a single video recorder. Ideally you need at least two VCRs, one to generate the source signal and the other to record the output from the genlock. VCRs can be rented very cheaply these days, so this shouldn't represent too much of a problem.



DIGI-View is one of the best art packages around



Add sounds to your creations using Music-X



Amiga Computing launches themselves into TV

But what can it do?

So far we've discussed the mechanics of desktop video, but we haven't actually mentioned what all this hardware can actually do.

The classic example is video titling, but there's so much more you can do. Even this seemingly limited application can be extended beyond merely adding static text to your home videos of granny at the beach.

Of course the Amiga is well catered for if you do just want to add titles to your home movies. Companies such as Zuma and Aegis (now Oxxi) have been selling video titling packages for years, so there's plenty to choose from.

I use Zuma's TV*Text Professional, which allows you to use all sorts of rendering effects to standard mono Amiga fonts. It can create impressive effects such as glints, sheens and metallic-looking text automatically, which is ideal if your artistic talents leave something to be desired. In some ways, you don't really need a dedicated video titling package, any package which allows you to manipulate fonts will do the job perfectly well – DPaint for example.

After a while though, you'll soon realise that a title generating package just isn't enough. If you want your titles to appear at precise moments, then you'll also need some form of presentation package.

These can be set up to display IFF screens – and perhaps even animations – on cue. One of the best is Elan Performer which can handle both static raster files – pictures to you – and animations.

Performer allows you to assign these to the Amiga keyboard, so all you do is hit the corresponding key when a particular graphic event is required.

If you're a home movie maker, then an Amiga desktop video system could also be used for creating special effects that would have been previously impossible. Because you can literally draw directly onto video, you could use a package such as DPaint to create any number of special effects.

Enter the lasers

This is precisely what many top film companies use DTV for – If they're making something like a Sci-Fi film, then they can use a machine such as the Amiga to generate such things as laser blasts etc. As with anything of this type, the only limitation to the kind of effects you can create is your own imagination.

As a general rule, try to create your presentations in the highest screen resolution possible, with full overscan and interlacing, if it's available. This may entail losing a

The video option

Video used to be an expensive medium with which to work, but with advances in technology achieved over the space of little more than a couple of years, you can build up a high quality system relatively cheaply.

The current number one choice for most home enthusiasts will be trusty old VHS, which has established itself as the consumer standard. VHS isn't exactly ideal for professional desktop video – believe it or not, Betamax was far superior – but better quality systems such as Super-VHS and Hi-8 are starting to become available.

Super-VHS, or S-VHS as trendies call it, offers a much higher resolution which will produce better quality results. Even if you use only a single S-VHS deck, the destination tape will be closer in quality to the source. Super-VHS recorders are currently rather expensive, so it may be worth renting instead of buying. Genlocks are already starting to appear that take advantage of the Super-VHS format so for those you can afford it, going for S-VHS is a good bet.

Hi-8 also looks very promising indeed. This new system uses high bandwidth 8mm video tapes offering very high quality picture and stereo sound recordings. Coupled with the fact that the tapes are very compact, this too looks like a favourable alternative to the ageing VHS standard.

Then of course there are video cameras and camcorders. Every week sees more and more of these pouring onto the market, so it's only a matter of time before it'll be possible to pick up a camcorder for little more than a couple of hundred pounds. If you can get a camcorder which offers built-in playback, then it's possible to use this in place of a source video recorder. This is perhaps a more favourable set-up, as it also allows you to grab your own video material.

If you intend buying a second VHS video recorder, then a good bet is the new Amstrad Double Decker twin video system which costs approximately £400. This rather groovy bit of kit features not one, but two video recorders in one box.

It's an ideal machine for home DTV enthusiasts. Not only can you play and record simultaneously with the same machine – on two separate tapes, of course – but it also offers tape to tape transfer of video material.

few colours, but the results often look considerably more professional. Because of the huge amounts of memory that such displays swallow, 512k users may want to invest in a decent sized RAM expansion. If you can afford it, go for at least 2 Mb.

Then, of course, there's sound, in the form of both music and effects. Most videos offer a separate 'audio out' connector, so you can also mix in your own sounds to the existing sound track using an audio mixer such as the one produced by Omega Projects, which is the one I use.

This way you just feed the output from the audio mixer into the destination video recorder and both sound and vision will be recorded back to a single video tape.



Genlocks enable you to combine computer-generated pictures...

Software neglected

The best package for this kind of thing is currently Deluxe Video 3, as it can handle both graphics and audio. Unfortunately current Amiga desktop video software tends to neglect the audio side of things a tad, so it's really a matter of experimenting with multi-tasking to get both audio and visual materials working together.

Hopefully when ARexx takes off – which it should now it's an integral part of Workbench 2.0 – we'll see presentation packages that can control software such as sequencers and samplers, but until then it's a case of working around limitations.

The MicroIllusions package Music-X (and Junior) is great for adding music and sound effects to desktop video presentations.



...with those from a video to produce a stunningdisplay

Because Music-X has a 'real' clock which represents time in terms of hours, minutes and seconds, it's possible to build up a sort of cue sheet for sound effects simply by storing them as samples within Music-X and then using the Bar editor to lay down play note events at the exact time that the samples are required.

The same goes for music – just compose your tunes within Music-X and then use the program's unique 'Play Sequence' event to start the score when it is required.

If you're lucky enough to own a MIDI keyboard, you could even assign samples, and indeed entire scores, to your keyboard using Music-X's unique keymapping facility. This way you just strike a key whenever you want Music-X to play a sample or start a tune playing.

Professional video engineers will probably laugh at such an unreliable system of syncing sound and video, but it's about the best way possible when your budget is rather limited. In the professional world, video engineers use a synchronising system called SMPTE (Society of Motion Picture and Television Engineers) which is used to weld music and video together.

Music-X does support SMPTE, but the hardware which uses it is very expensive.

Desktop Video is an exciting application that would have been practically impossible before the arrival of machines such as the Amiga.

Although it may seem rather limited in scope at first, experimentation with different video techniques can reap wondrous

Video solutions

DPL Video Services of Wembley is a company who specialise in low cost but high power video solutions. If you're a video engineer who has £3,000 to spare, then DPL's complete video system could well be what you've been looking for.

The heart of their system is an Amiga B2000 with 3Mb of RAM,of which 1Mb is chip RAM, and a 40Mb A2091 auto-booting hard drive.

Also thrown in is a Commodore 1084 monitor which offers both RGB and composite inputs, making it ideal for viewing both Amiga and genlocked displays.

Obviously you'll be wanting a genlock, so DPL supply the Neriki Desktop genlock (which you can read more about within the main body text).



With a suitable art package all kinds of art package all kinds of effects are available

Software wise, DPL have selected what they feel to be the state of the art in Amiga DTV software including DPaint III (paint and animation), TV*Text Professional (titling) + 3 Zuma Font packs, NewTek's Digi-View 4 digitiser and DigiPaint HAM paint system, Pro-Video Titler and a selection of public domain utilities.

Obviously three grand is a lot of money to anyone (even the Editor!), but DPL believe that the combination of Neriki genlock and Amiga makes for the most cost effective video system available. For professional users, things have never been so good.

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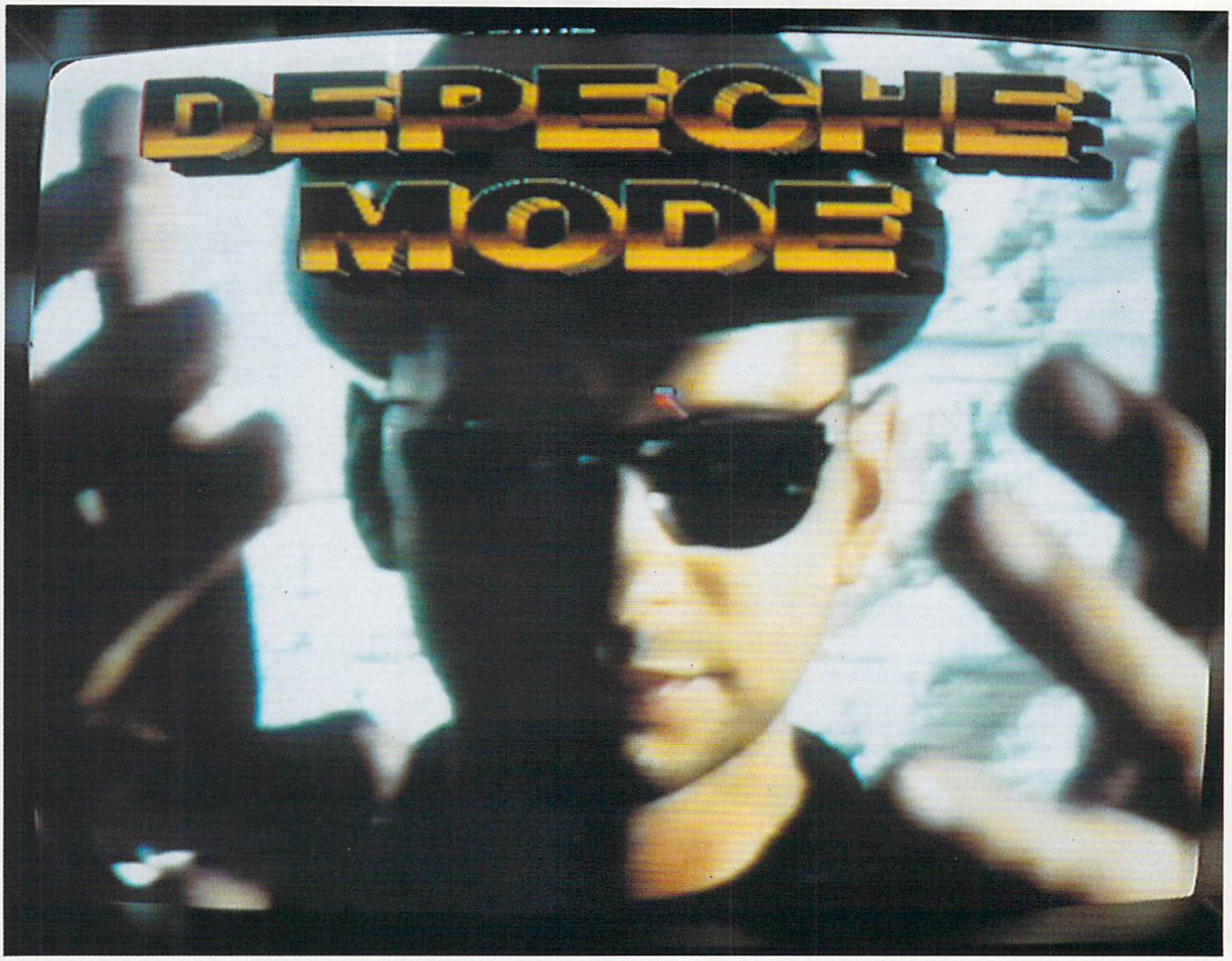
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rewards. It really is down to you to find just how far your video presentations can go. With a minimal outlay you too can produce results that would have made video engineers green with envy little more than a few years ago.

Future tense

The Amiga may have already established itself as the de-facto standard in video computing, but the software and hardware we have today is little more than a taster of the goodies that we'll have tomorrow. Indeed, the future has only just begun.

In many ways desktop video is very closely associated with the latest buzz word application, multimedia. Indeed the genlock is an integral part of many multi-media systems. Because the two are so closely associated, the development of multi-media software is good news for desktop video users. Many multi-media packages are ideally suited to desktop video applications, so it's up to you to use them to their fullest.

More immediate is the impending release of several major DTV applications. First up is Gold Disk's long-awaited ShowMaker system, which promises to be something very special indeed. ShowMaker is very much the DTV package Amiga users have been waiting for. It provides full support for ARexx, therefore allowing it to control other applications. Not only that, but with the addition of some extra hardware, it can directly control your video recorders, therefore providing perfect synchronising of your presentation. Expect a review as soon as it is released.

Next up is Video Toaster from NewTek, the company responsible for the acclaimed Digi-View video digitiser. Many industry pundits believe that 'Toaster could well be the most revolutionary product yet devised for the Amiga. For £1,500 – it ain't cheap! – you get a seven-input broadcast quality genlock, a powerful digital effects system, 24-bit frame grabber and buffer, 24-bit painting and full 3D animation.

Rumour has it that those who have been lucky enough to see it have suffered for weeks from 'knock your socks off' syndrome. If you're after a genlock that offers that bit more than the rest, then Neriki are a name to look out for. Neriki, of New South Wales in Australia, has been producing

Genlocking on the cheap

Neriki genlocks may be the best, but they're certainly not the cheapest. If you're after little more than a simple genlock that will overlay your graphics onto video, then there are much cheaper alternatives available. Here's a quick run down of a few for those of us with somewhat less demanding needs.

ASAP's Mini-Gen is a simple, no frills affair that can be picked up for just over £100. It certainly isn't the best quality genlock you could find; but is worth investigating if you're on the bread line. For the rest of us, it may well be worth shelling out a few pounds more for a better quality unit.

Rendale produces a couple of genlocks in the shape of the 8802 and the 8806. The 8802 is the cheapest of the two. It offers near broadcast quality, both background and foreground keying and can be picked up for around £290.

It's big brother, the 8806, offers full broadcast quality output and selectable colour keying. Price for this one is a bank braking £800.

Amiga genlocks for years now, so you can bet that the company knows a thing or two about producing a decent bit of kit.

In independent tests conducted by a well known Amiga technical journal, Neriki genlocks came out on top in nearly every test category. With a pedigree such as this, you'd be right to expect something pretty special.

Neriki genlocks come in two flavours, although these themselves also come in two flavours! At the bottom of the scale is the company's DeskTop Composite genlock which offers near broadcast quality output for around £750 plus VAT.

Next up is the big brother to Desktop Composite, in the form of the Desktop Y-C at £850 plus VAT. The Y-C series have special connectors to allow them to take advantage of the higher resolutions offered by the new breed of Super-VHS decks now becoming available.

Both the Y-C and composite models allow background keying with full fade control. In plain English this basically means that you can control whether colour 0 is to be made transparent or not. If it's turned off, then the second video source will not appear behind your Amiga generated graphics. One nice feature is the ability to fade in and out the Amiga graphics using a built-in dissolve knob. This allows the input signal to be replaced gradually by the computer image (or vice-versa) by slowly turning the dissolve knob either left or right. This is particularly effective when using the genlock in conjunction with video titling software.

At the other end of the Neriki spectrum is the Image Master genlock, which is also available in both composite and Super-VHS compatible Y-C formats. This professional standard genlock offers all the benefits of the Desktop range, but features a full broadcast quality encoded output of 600 lines, thus making it ideal for high end video applications.

Sounds like a very nice piece of kit, right? Problem is, they don't come cheap. Expect to pay around £1,150 for the basic composite Image Master.

Both the Image Master and Desktop series genlocks come in 19 inch 1U rack-mountable format, so they'll slot in nicely with both professional music and video hardware.

OK, most of us don't possess such gear, or even the racks to store them in, so you'll be pleased to know that they also sit underneath your Amiga monitor quite nicely. If you've got either an A1000 or A2000, you can stack both genlock and monitor on top of the system unit.

Neriki genlocks are distributed by DPL Video Services Wembley Park Business Centre North End Road, Wembley Middlesex, HA9 OAG Tel: 081 900 1866.

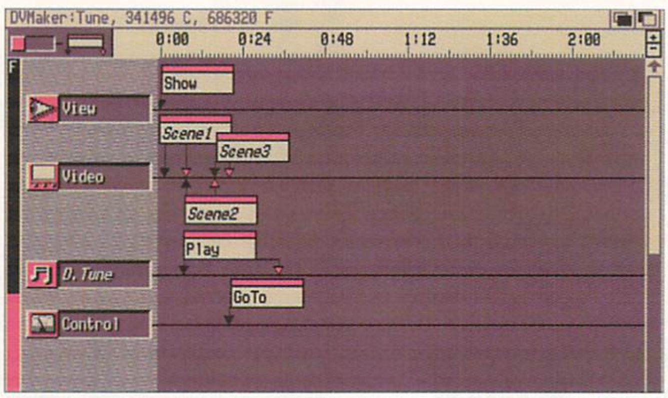
Money no object

If our look at desktop video is too basic for your needs, then you may wish to invest in some professional video kit. Here's a run down of the kind of hardware you'll need.

If you want to be really posey, then a video mixing desk is a must. With it you can mix two of more composite signals into one, therefore, allowing you to create such effects as those seen on TV and at the movies. News programs use them extensively to overlay a picture of the news reader on to video footage relating to the news story.

Desktop Video often requires you to transfer video material from one tape to another several times. As you'll probably already know, this inevitably leads to a degradation in picture quality. With a time base converter, picture quality is kept constant by digitally sampling the incoming video signal in real-time.

Although a TBC isn't really needed with a single video input, when you start your multiple inputs one is required to keep the signals in sync. Sounds like the perfect piece of kit, right? Problem is, TBCs aren't cheap. Expect to pay about £100 per day just to hire one!



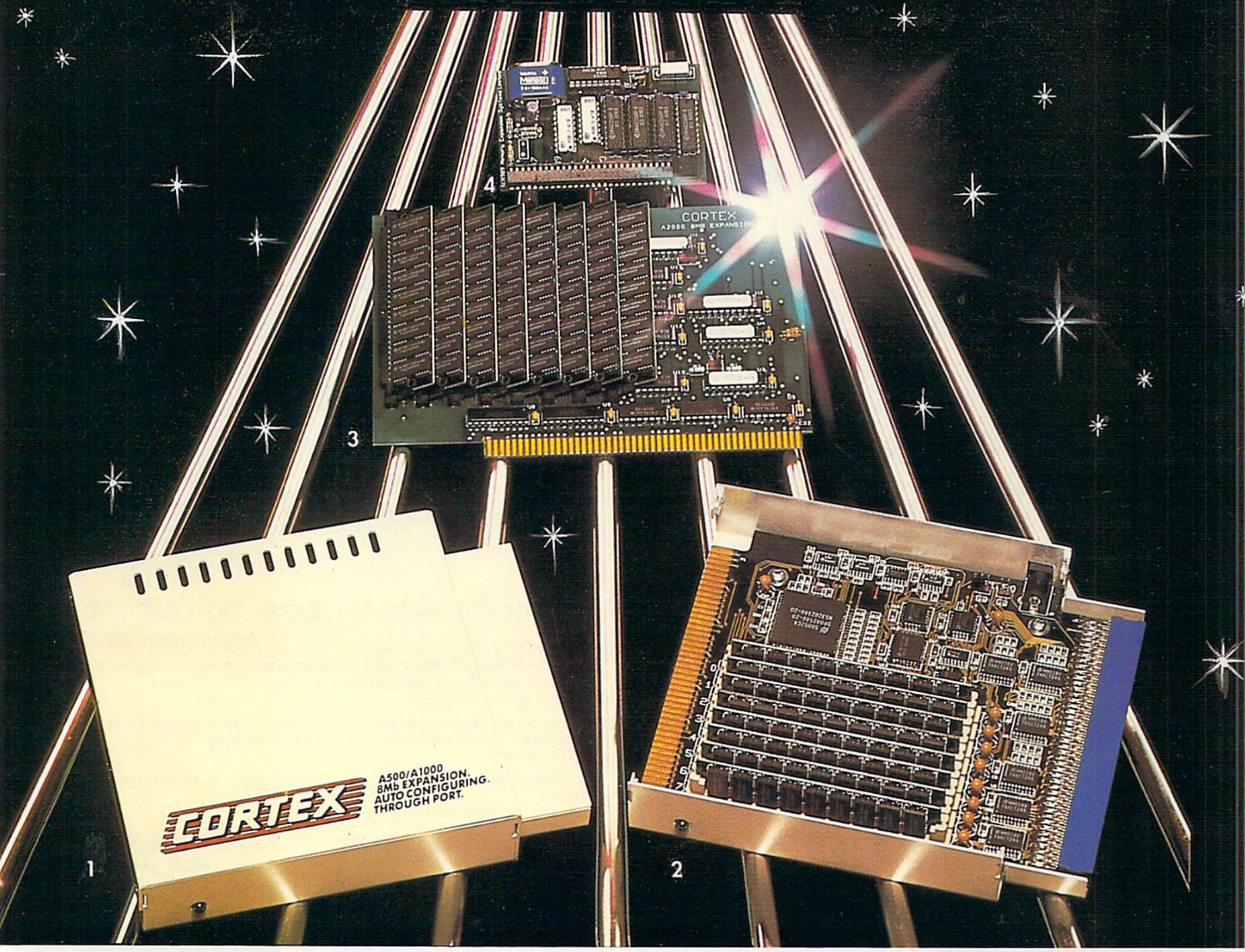
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Home Finance Program By Peter Veale.

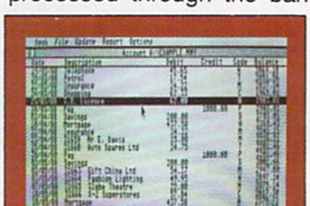
Amiga Version by Dan Lennard.

Here's what the critics say:

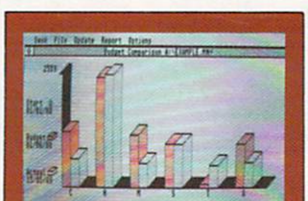
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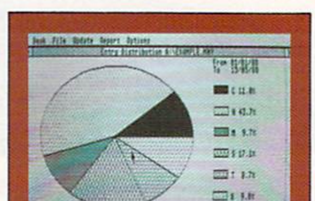
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AMIGA COMPUTING

THE DISK

Stuffed to overflowing with sumptuous software, we're having trouble finding sticky tape strong enough to hold it on the cover!

RadioDemon

This tune was created with MED, the tracker we gave you on the last cover disk. Alex Van Starrex reckons that with its strong and consistent monotony and carefree abandonment of both interest and worthwhile value, the music on our cover disk invokes strong images to the listener, transporting him far away from the everyday world to a magical dreamland where memories of filing tax returns and reading telephone directories are constantly and vividly evoked.

With stirring march rhythms reduced to a level of absurdity that even John Cage would be envious of, and enveloped in the almost gut-wrenching dissonances of the major and minor keys, our cover disk tunes manifest themselves as possessing all the qualities that make Amiga computer music so familiar and yet so attainable by almost anyone who can lay their hands on a music program.

He sincerely doubts whether Igor Stravinsky or Maurice Ravel could possibly have re-orchestrated these works without losing any of the appeal that comes from their being pieces churned out by a glorified adding machine, thus bringing a level of ultimate truth through to all, and without the need for descriptive words or lyrics.

I still can't work out whether that's a compliment or an insult. Alex is an Australian, so he was probably on a XXXX drip at the time. Nice one, Alex. More please.

Are you a budding musician looking for fame and fortune? If so, perhaps the Amiga Computing cover disk can give you a little push up the ladder. You never know who might be listening to your music...

If you insist on sending executable tunes, then try not to send the kind which freeze the mouse pointer or use the left mouse button to quit – right button or both is better. If your tune needs a separate Play utility, please include that on the disk as well.



So Alex is an Australian is he? Obviously far more talented than his country's rugby league and cricket teams

Parnet 2.40

Parnet is here by popular demand. To be honest I considered it a little too specialised and a little too advanced for the cover disk, but there have been too many requests to ignore.

Networking is a deeply wonderful experience. Imagine being able to have access not only to your own machine, but to your friend or colleague's machine on the desk opposite. Imagine being able to run software from his/her hard drive. Imagine being able to write him a message and save it in

Phonedir

Phonedir is a short and simple telephone directory program with one important addition – it will actually dial the telephone number for you!

This is because the program can produce standard DTMF dialling tones, allowing it to dial any telephone number as long as your telephone and local exchange supports tone dialling (System X), and many do nowadays.

If your telephone is of a modern design, it will have a switch of some kind on it to allow you to toggle between pulse and tone dialling.

If you don't know whether your local exchange is on System X or not, take your receiver off the hook and listen to the dial tone for a while.



By all means use this program to ring us, but please, please ask for John Smith

If you're on System X, after about 20 seconds you'll hear a series of high tones and a recorded message.

To run the program from Workbench simply double-click on its icon. From CLI, first use CD to change the current drawer to that which contains PhoneDir (CD015:PHONEDIR on the cover disk) then type 'run phonedir'. The reason for changing the current drawer is that if you save the phone directory which you have created with PhoneDir it is placed in the current drawer. When you first start PhoneDir it checks the current drawer to see if you have already created a phone directory file and if so, loads it into memory.

There's nothing to stop you having several phone directories in-different drawers. PhoneDir will load the one in the drawer that you are currently CD'd to.

When PhoneDir is up and running, you will see two string gadgets on the left (one labelled Name, the other Phone) and a cluster of buttons to the right.

Now I'll go through the buttons one by one explaining their functions.

SAVE: Selecting this button will save the entries held in memory to a file named directory.data in the current drawer.

ADD: This allows you to add a name and associated phone number to the phone directory. First click in the Name gadget and type in a name, then click in the Phone gadget and type in a phone number. Finally, click on the Add button to include the name and phone number in the directory. Entries are automatically sorted into alphabetical order.

START: If you already have some names and phone numbers in the directory then selecting this button will display the first in the list.

DEL: To delete an entry in the directory, move to the entry for deletion using the Start, End and arrow buttons, then select the Del button.

ARROWS: Selecting the left arrow displays the previous entry, if there is one. Selecting the right arrow displays the next entry, if there is one.

FIND: This button provides a limited search function. Select the Name gadget and type in a string. Now click on the Find button and the program will attempt to find an entry which begins with the string you typed. For this reason I would suggest that if you are storing peoples' names – John Smith for example – enter them in the form Smith John so that they are sorted alphabetically by surname and can thus be searched for by surname.

END: If you have some entries in the directory, selecting this – button will display the last one in the list.

QUIT: Hitting this button quits the program. If you have an unsaved phone directory in memory don't forget to select the Save button first. Sorry, there's no reminder – 10 brownie points deducted from Richard Kalton's account.

L & R: These two gadgets are mutually exclusive. They allow you to decide whether the DTMF dialling tones are sent to the Left or Right speaker. Obviously only useful if you have some sort of stereo sound output. When the program is first run the sound output is directed towards the right-hand speaker.

DIAL: If you click on this gadget, or hit the spacebar, the number currently shown in the Phone string gadget will be dialled. If you have stereo sound output, a stereo monitor, hi-fi or Soundblaster for example, then first decide which speaker the tones should come out of with the L & R buttons.

Make sure the number you want to dial is displayed in the Phone gadget, then hold the microphone part of your telephone receiver (that's the bit you talk into) very close to the speaker from which the tones will be produced. Then click the Dial button or hit the spacebar.

You should pick up the telephone receiver, place it next to your chosen speaker and hit the Dial button or spacebar as quickly as possible otherwise the dialling tone may disappear. If you delay too long – about 20 seconds with my exchange – you'll get a recorded message from the telephone requesting you to replace the handset and try again.

If you can still hear the dial tone from the telephone when the computer has finished dialling, try increasing the volume of your monitor, hi-fi or whatever. If this doesn't help then it's probably because your phone line isn't on System X yet and doesn't support tone dialling.

If you hear nothing but silence from the phone once the computer has finished dialling, try increasing the volume again or changing the position of the handset. If this doesn't help, try swapping speakers.

You don't actually have to add a name and phone number to the directory in order to tone dial that phone number. A number can be dialled simply by selecting the Phone gadget, typing the desired phone number into it then hitting the Dial button or the spacebar.

PHONEDIR was written in Lattice C V3.10 by Richard Kalton. The program is freely distributable so long as no money changes hands in the process. PhoneDir and its source code may not be included for sale in any public domain, shareware or freeware disk library.

It may be offered for download on Bulletin Boards provided it is made available as a free download.

his messages directory on his hard drive. Imagine (imagine being able to squeeze even more 'imagines' into this short pieceis- Ed) being able to do all this, and more, from your own keyboard. That's what networking does for you.

Parnet sets up a network using the parallel port. Don't let its apparent complexity put you off. You've got all the festive season to get it together. And whether you get Parnet working or not, you'll have lots and lots of fun and games trying!

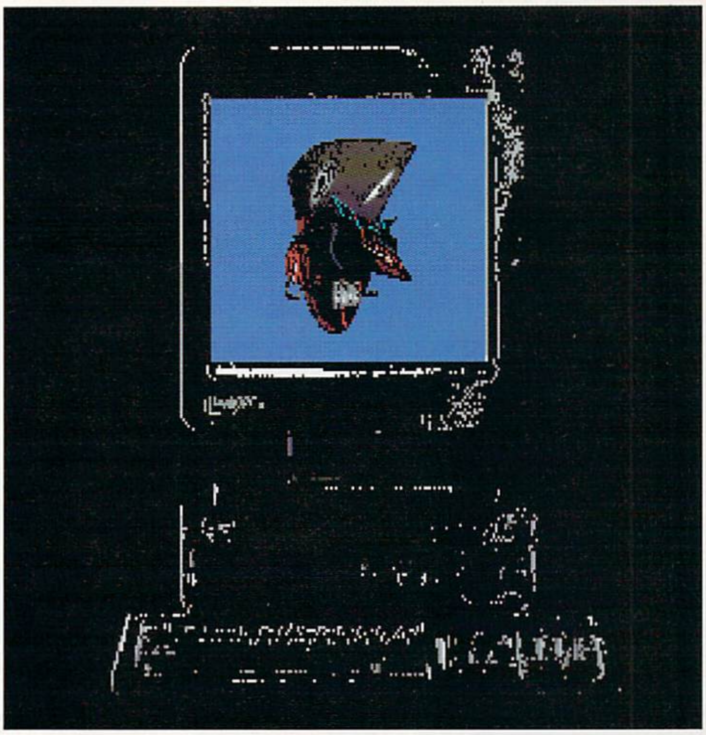
Computer Head

Alternative Image is the company when it comes to generating the kind of graphics previously unseen outside a Dire Straits video is until now.

Exclusively Amiga-based, Alternative Image create fantastical animated displays guaranteed to knock your socks off. And just for your favourite magazine, 'Image agreed to construct a stunning animated sequence and mount it on our cover disk.

The amazing result is Computer Head. Drool at those colours, thrill to the smooth animation and swoon to the effects of 'extraneous' light sources reflecting from the silicon bust.

And when you've recovered, turn to an amusing and exclusive company profile and interview we did with them.



And now a veritable feast for your visual senses

Rummy

Rummy started life as a noble and ancient Spanish card game called Conquien. It crossed the Atlantic with the early Spanish colonists to Mexico. From there it wandered into Texas, where it gave birth to a child, Rummy.

Nearly a century ago it took Europe by storm, gaining for a while as popular a place as Contract Bridge occupies today, but it passed out of favour after a few years. The object of Rummy is to collect 'sets' of at least three of a kind, and 'sequences' of at least three cards in the same suit. The full rules and scoring system are explained in the file Rummy.DOC.

In this excellent Amiga implementation, you can play a game with either two or three players. Any or all of the players can be controlled either by the Amiga, by yourself, or by friends. If you've set up the Amiga to control all three players, don't forget to select Continuous Play from the Special menu else you'll have to click on Continue after each player's turn.

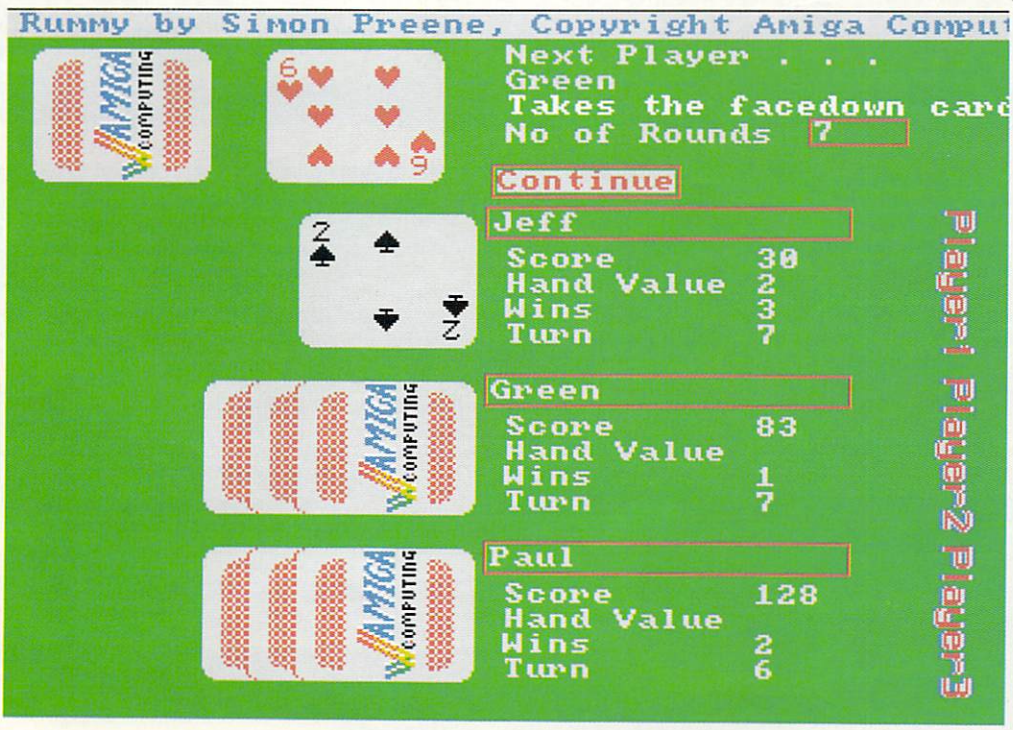
The computer players have 10 skill levels. The default level on running Rummy is Level 4. The skill level for each player is selected from the Intelligence menu.

At level 10 the computer plays a mean game, remembering cards that have passed out of play and making educated guesses as to whether the card it wants is in someone else's hand or still in the pack.

I'm keeping a long-term running score of my points against the computer's, penny a point. At the moment I owe it £3.65. When it gets to £20 I might buy it a game.

An excellent program but a shame there's no load or save option. Rummy was written with Lattice C V5.05 by Simon Preene. This program is freely distributable so long as no money whatsoever changes hands in the process.

Rummy, its source code and its documentation may not be included for sale in any public domain, shareware or freeware disk library. It may be offered for download on Bulletin Boards provided it is made available complete with source code and documentation as a free download.



Fancy yourself as a card shark, but bored with Poker and Black Jack? Rummy may be the answer to your prayers

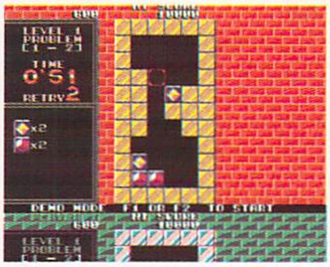
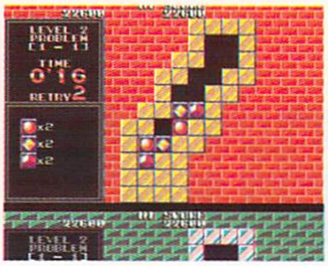
you are now entering

theGame Zone...



Puzznic

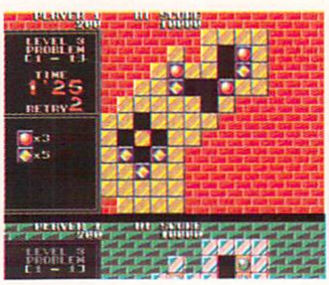
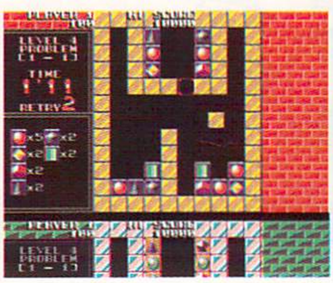
Supplier: **Ocean**
Price: **£24.95**

Transportation plays a major part in this Ocean puzzle game. As with all games of this type, there is a time factor involved. In Puzznic there's a count-down while you struggle to match up blocks of the same colour or pattern. When two or more likewise blocks rest adjacent, either vertically or horizontally, they all flash and disappear. The object of Puzznic is therefore to remove all the blocks from the screen by careful manoeuvring.

The game does need real care, since you can only move your blocks sideways. To get them to go down just push them over an edge and gravity takes its course. With only two of each type of brick it is simplicity itself to sort out a screen. Where it starts to get tricky is when there are three blocks, and two are very near each other. Remove those two, whether by design or accident, and you're scuppered, with one block remaining.

Puzznic doesn't boast great graphics or sound, but after a couple of screens it becomes fiendishly clever, requiring more and more forethought before you continue playing. Thumbs up time as this is a refreshing alternative to Tetris, Welltris et al.

Betrayal

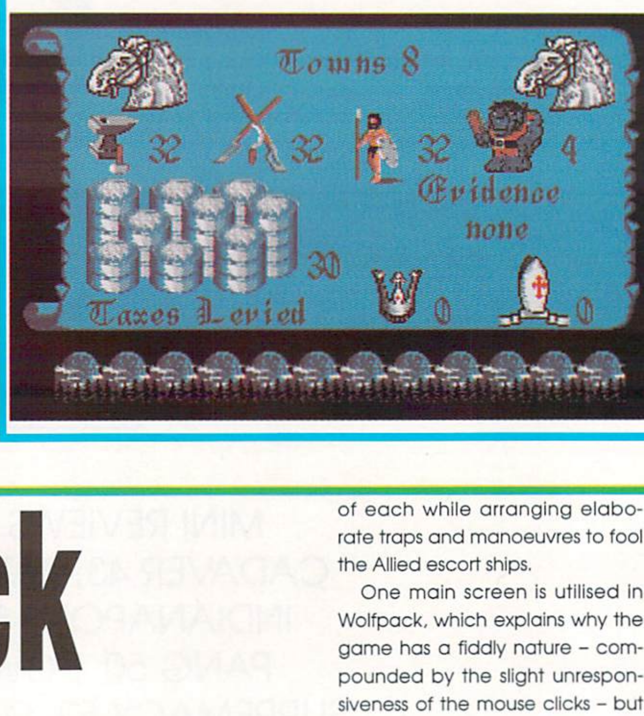
Supplier: **Microprose**
Price: **£24.95**

Give me a game where treachery is the altar on which friends are sacrificed, where nefarious deeds are not just the order of the day, but one of the Ten Commandments, and where tongues have more forks than a set of stainless steel cutlery from Sheffield, and I'll give you a knife in the back.

Generosity is a strong character trait of mine. In games like Betrayal, I give away a lot of knives.

This Rainbird offering has been touted as the next biggy after Midwinter, but alas lacks the cutting edge to take it there. The aim is to secure a majority of courtiers in both the court of the king and bishop, and then install your own puppet rulers, making you Mister/Ms Big. To this end, you travel around the poorly drawn land of the West Marches, capturing villages belonging to the other knights – four players, in any human/computer combination – flogging your own peasants and harvesting the land for cash, then eventually buying more seats in the two courts. Alternatively find blasphemous evidence against someone and blackmail them out.

Betrayal is a reasonable game, but is hardly distinctive or impressive in any way, and those graphics look like they were designed on a C64.



Wolfpack

Supplier: **Microprose** Price: **£24.95**

Achtung, achtung, das Englanders vost dropping das depthun chargun, mein Kapitan! And 30 seconds later it was all over for poor Fritz as U-141 collected a one way ticket to the bottom of the ocean. Unfortunately I happened to be the German captain that was going down, in the Mirrorsoft tale of aquatic service during World War II.

As captain of a U-boat, you not only have to worry about what the Allies are doing over your head, and whether you can fulfill your mission objectives – there are loads including a design your own scenario kit – but also where you left the other submarines in your wolfpack. If you leave them to the vagaries of computer intelligence they can end up anywhere, and usually it's on the sea bed, so you need to take control of each while arranging elaborate traps and manoeuvres to fool the Allied escort ships.

One main screen is utilised in Wolfpack, which explains why the game has a fiddly nature – compounded by the slight unresponsiveness of the mouse clicks – but if you can be bothered learning them, there are keyboard equivalents for all the controls.

Graphics are pretty good until you get close up to something, then the image simply becomes a jumble of bit mapped blocks. For all its faults this is still a fab game and will keep you happy until Silent Service II surfaces on the Amiga.

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Free Software



Ordinary people doing ordinary things, so Russians don't have three heads and eat babies as we've been told

WELLTRIS

Publisher: **Infogrames** Price: **£24.99**

Welltris, or 'Tetris: the Sequel' if you prefer, is the long awaited follow up to the arcade classic Tetris, one of the most successful logic games ever.

The action takes place in the 3D well on the left of the screen. The aim of the game is to guide the various shapes down the walls of the well, rotating them if necessary, so that they fit perfectly with the pieces already on the floor. You have to do this without leaving gaps, or pieces resting against the walls of the well.

Allow a piece to come to rest on the wall of the well, and the entire wall section is blocked for the next three falling pieces. When all four walls are blocked it's time for the immortal words 'Game Over'.

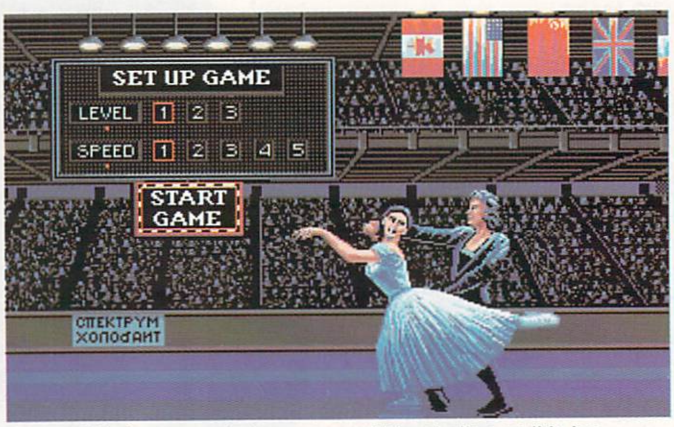
Sounds simple? If you can think and react fast enough it is, if you can't, however, it can be a very different story.

After sliding down the wall of the well, pieces continue to slide across the floor until they're either stopped by coming into contact with another piece or the opposite wall of the well. As a piece falls it can be moved around the walls of the well, providing they're not blocked, and when it reaches the desired point of entry to the well floor, pressing the space bar sends the piece flying down to a perfect fit with its companions.

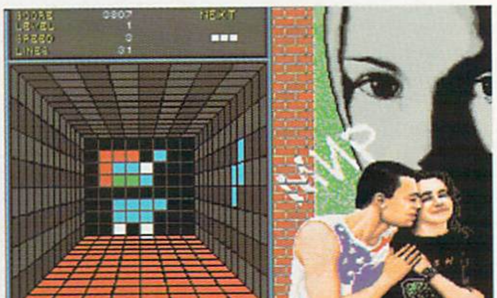
The higher the piece on the wall when released, the more points scored. When a line is completed across the well floor either horizontally or vertically, it disappears, allowing room for more pieces to fall.

The screen displays depict various aspects of Soviet society and as the difficulty levels change, so does the scenery. Anyone able to make it past Alexey should contact MENSA, and start donating to a sperm bank immediately (er, unless you're a girly - Ed).

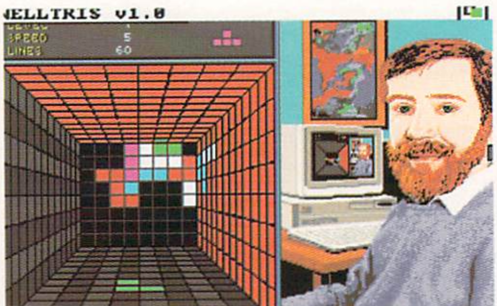
Like many essentially simple concepts, the closer you look the more complex things become. Any game which possesses these qualities is invariably a good one. No doubt Alexey Pajitnov will do for home computing what Professor Rubik did for coffee tables.



Be careful where you start, or you could be skating on thin ice



When you're in the red, getting around can be a real problem, things could be worse



Here's the man himself, watching you, watching him, watching you, eh?

Graphics

Strange would not be an unfair description. The actual gameplay graphics are adequate, being more functional than decorative. As for the screen shots, they're pleasant enough and do add an extra goal to the game rather than just increasing your score.

Sound

Thin on the ground, mostly short samples, with a jingle at the end of each level. The samples are played, for example, whenever a line is completed just before it disappears. My personal favourite is a nice metallic crunch as blocks slam together when a line is removed. There is music, again with a Russian flavour but unfortunately, it's dreadful (thankfully you can turn it off).

Gameplay

Basically simple and repetitive, which nevertheless requires considerable co-ordination of hand and eye, especially when things start to speed up. The real game is played in your mind as you desperately try to calculate the possibilities while the piece makes its inevitable slide to the floor of the well.

Be warned, you could become addicted, it's the sort of game you may tire of but will always come back to. If you're a Tetris fan, the game's a must, and I've no doubt you will find it worth every penny, literally adding a new dimension to an already classic game.

If you're new to Alexey's work but are looking for something different and challenging for your collection, this could well be the one.



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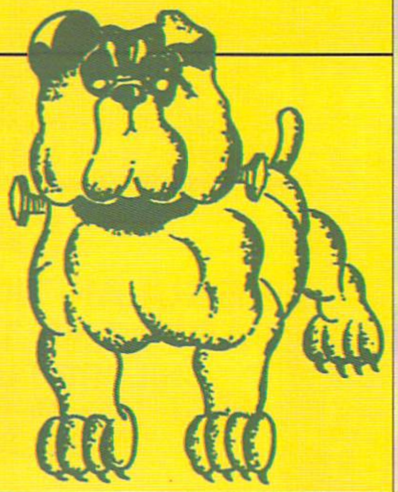
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One of the many foes to be faced



There's a hole in your boat and no way back

CADAVER

Publisher: **Imageworks** Price: **£24.99**

Does the thought of wandering alone through a deep, dark, dungeon fill you with the urge to wet your armour and shout for your Mum? You're not alone! Fortunately, the good old Bit Map Brothers have come up with the wimp's alternative: Cadaver.

Yes, I know it's a silly title, and no it isn't some form of rhyming slang. It is however, an excellent graphic adventure. Produced in the - now familiar - 3D isometric format (in the style of Treasure Trap) and for those people with very long memories, the Ultimate series on something called a Spectrum.

Fortunately we've come a long way since the days when everything was in one colour and the sound was enough to make you turn the game off. Cadaver is a fine example of the state of the art.

It's based upon the continuing adventures of Karadoc. Fancy calling a kid that. Some people, honestly!

Anyway, your mission and indeed his, is to explore Castle Wulf, dealing with the objects, monsters and people you meet on your travels, as well as the numerous puzzles which need to be solved before you encounter the final task, namely, killing the evil necromancer Dianos. Familiar scenario for adventure freaks?

What Cadaver lacks in originality, it more than makes up for in real quality. The action takes place in the 3D dungeons, rooms and passages of Castle Wulf and Karadoc is moved around this little world with a joystick (as indeed are all his functions).

If you want to pick up an object, move Karadoc next to the required item. This activates a number of icon options relevant to that particular object, you can then pick it up, use it, drink it, examine it and so on, depending on the icons activated.

Certain items however, cannot be picked up and may only be pushed, dragged, or used in the room in which they were found. There are a large number of icons which become available depending upon the item being used and the situation Karadoc is presently involved in. This can make interaction with both characters and objects quite complex and also makes for some interesting puzzles.

Many items can be found on your travels and these fall into four broad categories, the first being food and drink.

Food is usually found in chests and drink usually in barrels, but be careful, always examine what's in the barrel before you guzzle it down.

The second category is best described as a collection of utilities, items which are needed to proceed in the quest, such as keys, ropes, weapons and so on.

The third section consists of magical items, and these can be weapons, healing potions, and various spells for more abstract uses such as learning what certain potions may be used for.

The Main Screen is the window to Karadoc's world, it displays your present position in the game, giving all the details you need to know concerning Karadoc and the items he finds.

There's a rucksack which, in the interests of safe keeping, stores all your goodies. They can be viewed as a whole, or scrolled individually.

In the first room of the adventure you'll find a personal log book. Examining it provides details on your health, score, and the percentage of completion of the present level.

A map is activated by pressing F1 and the result is a display of the rooms you've entered. Maps can be scrolled and zoomed at will.

Up to 10 individual quests can be saved via a separate disk and loaded as required, however there is a price to be paid.

The further you progress in the quest, the more money a subsequent save will cost. There is some good news, at least loading is free!

Graphics

Excellent, giving real texture to the game, and creating a wonderful atmosphere with subtle additions such as the flickering lamps, and mushrooms growing as Karadoc wanders by.

Sound

This takes the form of individual samples – footsteps, screams and the like. All the sounds are extremely convincing, but, and this is probably the only 'but' in the game, there is no background music.

OK, it's not a big problem, and it probably would've been turned off if it was there anyway. However, it may have added significantly to the atmosphere of the game.

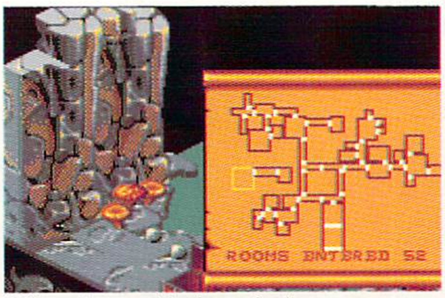
Gameplay

Again, excellent. Controlling Karadoc and the items he uses is quite straightforward, given a little practice. One of my favourite aspects of the game's design is the difficulty level, which is pitched just right - hard enough to be a challenge, but not impossible. Which in the long run will save you lots of money on Valium and smashed up computer equipment. The game, like a good book, seems to have real depth.

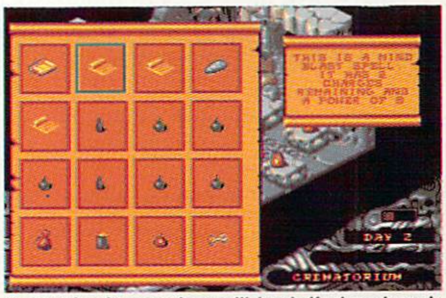
What else can I say apart from 'buy it!' If you're looking for a stocking filler for Crimbo, you would have to go a long way to beat this one.



Solve the difficult puzzle and you can claim a wonderful prize (Crackerjack, right?)



With such a corkingly perfect map, no more scribbling on bits of paper!



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BATTLE COMMAND

Publisher: **Ocean** Price: **£24.99**

Graphics

Fast and smooth, but the scenery often looks like MacDonalds has paid a visit at times. It's flat and empty, save for the odd shrub and low hill. The installations are nicely realised, and the tanks themselves all zip around impressively.

Sound

The music is a little flat, but the sound effects are crisp enough, without you sitting there gob smacked. It's all rather rudimentary really.

Gameplay

The game isn't going to win any Oscars for depth, as it consists of firing away at tanks and installations. However it is frantic fun, and the missions give the game considerable variety and increase its longevity no end. Simple, but satisfying.

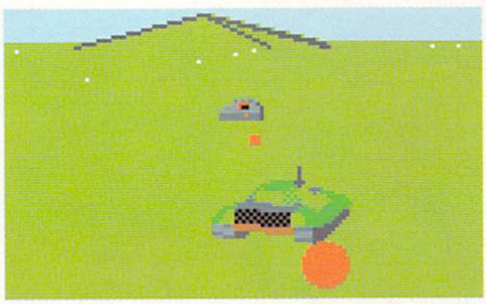
When Carrier Command was released a couple of years ago mouths dropped open in amazement. It was one of the few games that could honestly be described as awesome!

It wasn't until weeks later that everyone realised it had bugs and playability flaws. Realtime Software, the creators of that epic, haven't done anything since then, except work on Battle Command which, they hasten to point out, is not a sequel. It just has the word 'Command' in it.

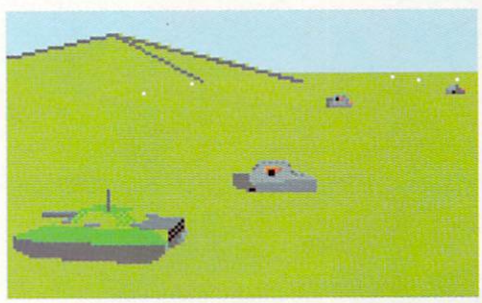
Battle Command will appeal to lovers of Battlezone, and to northerners who harbour resentment against southerners. Why? Because the plot has north facing south, deadlocked in an Ultra War.

You, as a Northerner in your one-man tank full of sophisticated electronics, are dropped behind enemy lines and have 15 or so missions to try to alter the course of the war. Or get blown up, which is the more likely.

The missions on offer range from straight blasting exercises to destroying particular objectives. You're also racing to pick up a satellite from behind enemy lines, leaving time-bombs on runways, shelling inaccessible bases, and – possibly the most varied – defending a bridge while your own forces pull back across it, then getting across yourself and blowing it up.



A majestically-sweeping landscape is the theatre in which you'll play out thrilling battles



From foreground to horizon, tanks of every side are rumbling into play...

You can tool up with a number of infra-red and radar guided missiles, a time-bomb, anti-missile lasers, a mortar, wire guided missiles, IR decoys, chaff and anti-armour systems. You don't get mines though, which is a serious oversight. You can't install everything because you only have four weapon pods, so armament needs to reflect mission requirements.

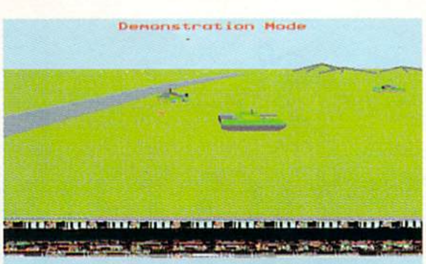
Once you get dropped off and are under way, you'll notice the screen has become 320 x 200 pixels – ie, sized to suit the American market. A scanner, your weapons pods, speed indicators and the main 3D display outside are your primary sources of information, as well as a damage display screen just like Carrier. Except you can't repair damage, and there is no way you can re-arm, capture armament, or organise a supply drop – something of a pity really.

The 3D graphics are smooth and decidedly impressive when there are large numbers of tanks on the move at once. They travel at a fair lick too, and the action is always thick and fast. Geographical features are minimal, the odd tree and hill here and there. You cannot drive up the hills or hide on the down-slopes and ambush anyone, but you can disappear behind them to avoid being shot at.

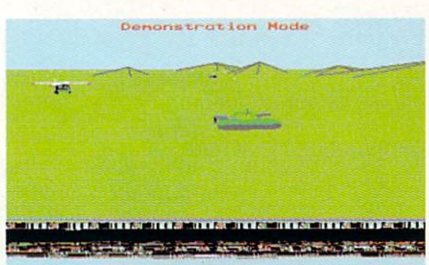
The missions make the most of what is, despite the interesting missiles and weapons, a simple game. If you were hoping to get a tank version of Carrier Command then you're in for a disappointment, since it comes across more as Battlezone with solid graphics and missions.

It is a good game however, and completing the 15 or so missions will take you no little time. These are what lend variety, because one minute you're sneaking towards a hidden base, ready to fire mortar shells at it because you can't actually see it, and then the next you are frantically trying to defend a bridge while your own troops straggle across.

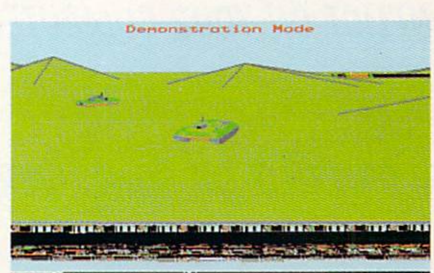
If you were hoping for a sequel to Carrier Command, you've done so in vain, but if what you were looking for was an all action, tank blasting, monster battle simulation, Christmas has just arrived...



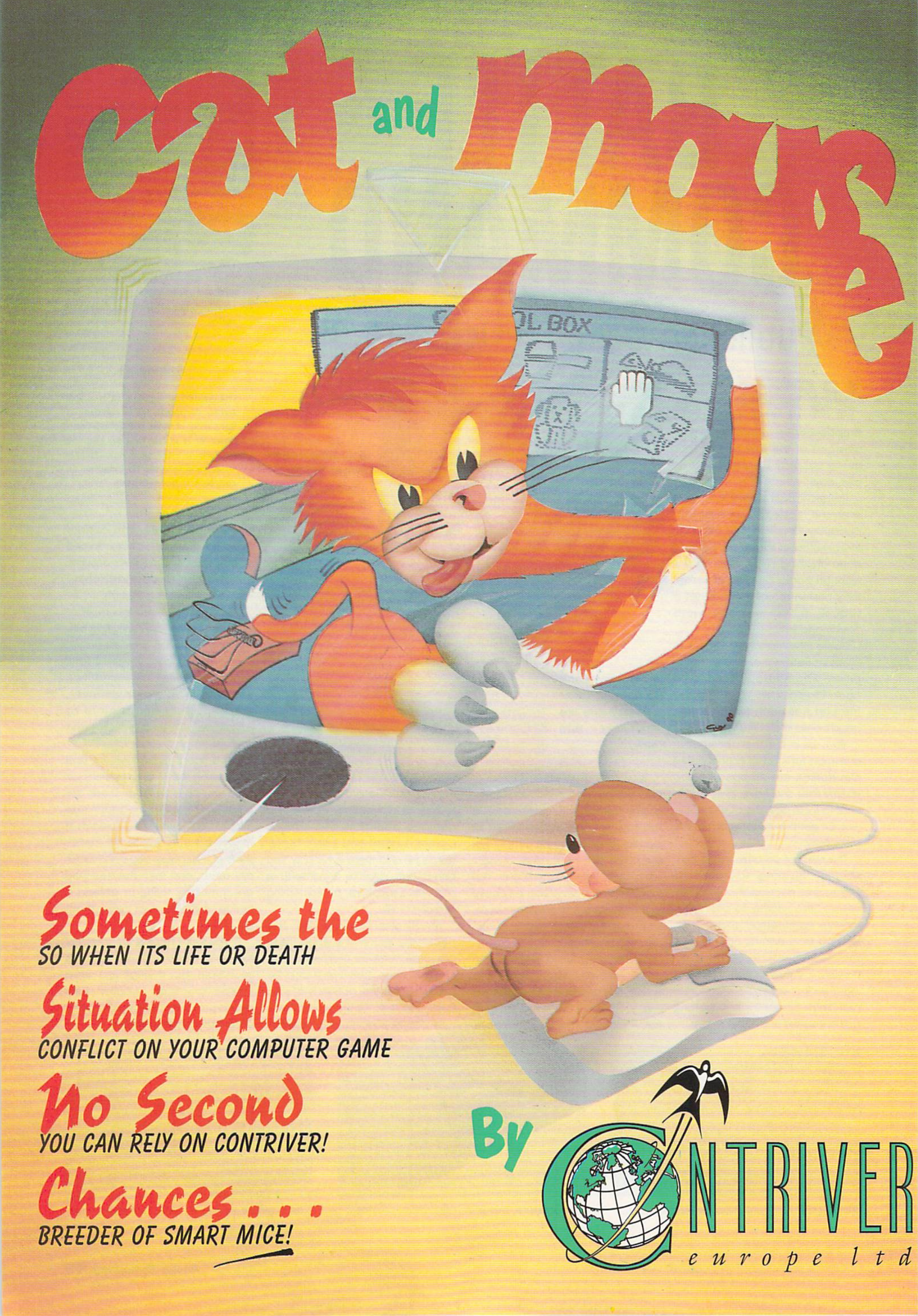
Although the graphics are not especially...



...impressive, this is an all-action, blaster...



...of a game which will thrill to the last shell


Cat and mouse
Sometimes the
SO WHEN ITS LIFE OR DEATH
Situation Allows
CONFLICT ON YOUR COMPUTER GAME
No Second
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INDIANAPOLIS 500

Publisher: **Ocean** Price: **£24.99**

Indianapolis 500 is the latest game from Electronic Arts and focuses, strangely enough, on the legendary American speedway race. Now you may think that to base a game idea on 200 circuits of an oval track which might take three hours to complete is the mobile equivalent of a text-only adventure about coarse fishing, but you'd be (mostly) wrong. Although the idea itself is boring in the extreme to anyone but a total speed-freak, EA's implementation of the racing experience is rather more exciting.

The scenario is simple. You are a driver with one of three teams, hoping to steer your car to victory. And apart from a few fine tuning options, whereby you can fiddle with things such as tyre pressures, wing angles, and the number of sandwiches you'll need for the trip, there appears to be nothing more to this game than driving as fast as you can without crashing until the bloke with the chequered flag tells you to stop. Until you start driving that is ...

At this stage the game's filled vector graphics really steal the show. From the moment you push forward on the joystick to accelerate out of the pit lane on practice day, the sheer speed of play is gob-smacking. When you're nose-to-tail at 225mph and trying to judge the gap between the car in front and the ever-present trackside wall, while worrying about other drivers lapping you rather than slamming into your rear end, the game becomes something more than a high speed merry-go-round. What it becomes, in fact, is the most challenging and addictive racing game to appear for a long time.

Speed is what makes this game work. Your cockpit is little more than a foot or so from the track surface, so everything tends to blip past you at nauseating velocities, and this effect is aided by the very slightly jerky screen update. It's notoriously difficult to convey the feeling of speed but Indie manages the task very well.

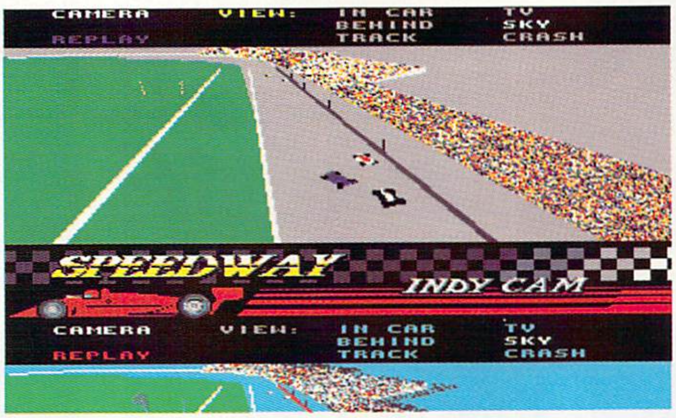
Steering can be controlled by joystick, keyboard, or mouse, and in all cases is very responsive. In fact, it's so responsive that I spent my first few laps hopelessly oversteering until I grew used to it. After that, you soon realise that the ability to make small repeated changes to your cornering line is essential if you are to negotiate the long, sweeping bends without losing yards of paint to the boundary walls.

Ten minutes of practice with a clear track should see you competent enough to tackle a ten lap novices' race, with no yellow flags to slow things down and no car damage (this is a godsend) should you, heaven forbid, collide with another car or a stationary distraction, such as spectators. This is where IndyCam comes in.

IndyCam is the obligatory action replay facility, and allows you to freeze the action at any time to review the last 10 seconds or so of the race from almost any angle and camera position. This is loads of fun and adds considerably to gameplay because it also enables you to replay your cornering efforts and judge how close you came to the optimum line (or alternatively, how much carnage you caused).

Unfortunately, this is the only added extra the program offers, and it's in this department that I have the most gripes. Why is it that we can fly head-to-heads in F-16s but not in lowly automobiles? With a two player, split-screen option or even a team management section, this game would have been the dog's vitals of the genre.

As it stands, it is a (slightly) flawed masterpiece which I can recommend to any fan of the sport, but if you're not particularly into race games or motor sport, then you'd be advised to try before you buy, as the otherwise limited scenario and gameplay probably won't grab your interest for very long.



Exciting action can be replayed so you don't miss anything...



1001 eager fans and a clear track ahead



Crash the car and watch those bits fly off!

Graphics

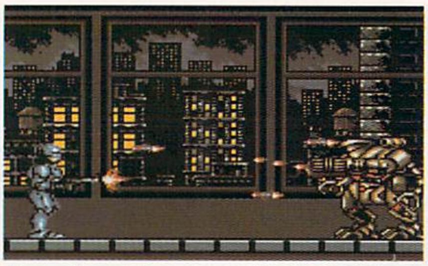
Excellent. The cars look like real racing cars and they move like them too. Screen update is fast, if a little jerky, and there are nice touches like IndyCam and the bits which fly off when you crash.

Sound

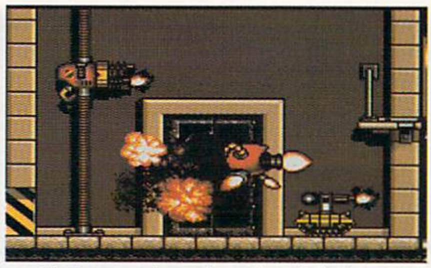
Good enough for what it does. The engine noises are throaty and you can actually hear other cars getting louder as they catch you, with nice doppler effects when they zoom past. Crashes are a bit duff, but you can sometimes hear clanging noises as exhausts and things fly off.

Gameplay

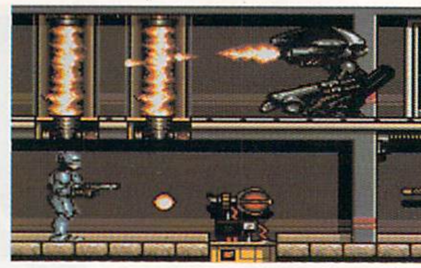
The biz. Fast and ferocious action, especially when mixing it with a pack of competitors, coupled with sensitive and responsive controls.



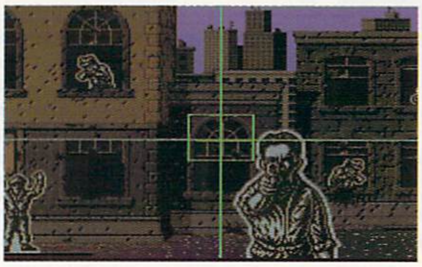
An endless sideways-scrolling procession...



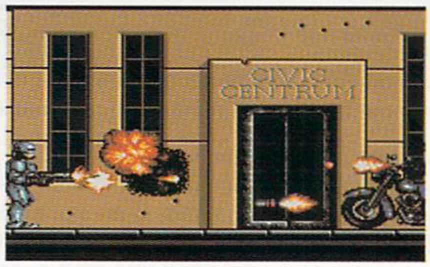
...of heinous cyborg foes dog Robo's...



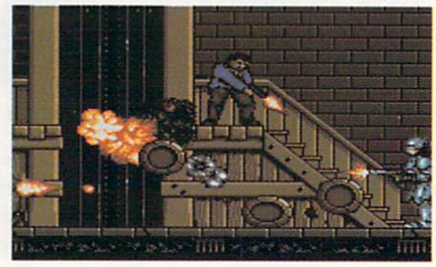
...every step as he tries desperately to...



...redress the balance of power between...



...good and evil. What will be the...



...outcome of this vicious battle?

ROBOCOP 2

Publisher: **Ocean** Price: **£24.99**

Whether it was due to cross media marketing, or whether the video inspired thousands of would-be Murphys to rush into their local software supermarket, or indeed whether it was simply a very good game, there's no denying that Robocop (the game) has been an astounding success story for Ocean. Can the sequel possibly live up to that sort of performance? Read on and find out.

Robocop is a man in a can with a mission. A mission to clean up the streets and stop the flow of designer drug 'nuke' through the arteries of old Detroit. This takes place over a scant three levels, inside various nuke producing factories, and ending with a confrontation with the Robocop 2 model on the streets of Detroit.

On the first level the object is to arrest a sidekick of the drug lord Cain, while collecting 10 packets of nuke for destruction. This accomplished, you can go on to find the actual drugs laboratory and destroy it while going on to arrest Cain.

In the final showdown, you fight your way through another of these warehouses to confront Cain again, now firmly chopped up and fitted inside the Robocop 2 casing, and hopefully blow him to bits. Alas you don't get to see Cain go on the murderous rampage that he did in the film, but that's memory limitations for you...

Memory also plays a part in one of the two sub-games which appear between the levels. After a digitised picture of Murphy's wife, a simple board containing chips and obstructions appears. The object is apparently simple. Just move from one chip to another in whatever order you like, until you have covered all of them.

It would be simple if it wasn't for the fact that you cannot retrace your steps, and some chips are positioned so the there is only one way in. There's a time limit too. There are three of these circuits to complete, each of which restores a picture of Murphy's pre-mutilated face as he starts to remember his former life. Complete all three and you get a bonus continue option when you've lost all three lives in the main game.

The other sub game involves targeting your weapon on criminals who pop up in a firing range-like screen. The more hits you make, the easier the villains will be to kill in the next level. Conversely, make a mess here and the game suddenly gets hideously difficult.

The main sprite for our man in a can is hugely impressive as he plods his 16-coloured way around the screen blasting hither and thither. Sampled sound effects for the weapon, which can be upgraded to produce three-way fire and rapid fire, make for violent and exciting entertainment. Robocop has the usual range of moves, being able to fire at diagonals as well as up and sideways, and he can squat to duck from fire, while still spraying it around himself.

Energy can slowly crumple as Robo takes hits, but this can be replenished by walloping containers which may disgorge extra energy, a weapon power up, or something fiendish like reversing direction.

A status line can be called up to give the situation on how many cans of nuke are still required to be collected, and how many hostages have been rescued. Rescue enough hostages and you get an extra life.

There may only be three main levels, but what's packed into them is going to keep you occupied for some time. Boy is this game tough. There are hundreds of villains out to ventilate you, stomper platforms can squash you like a bug, and collapsing platforms and other traps can dump you in rather messy situations.

It is by far the best film conversion of the year and should be number one for months.

Graphics

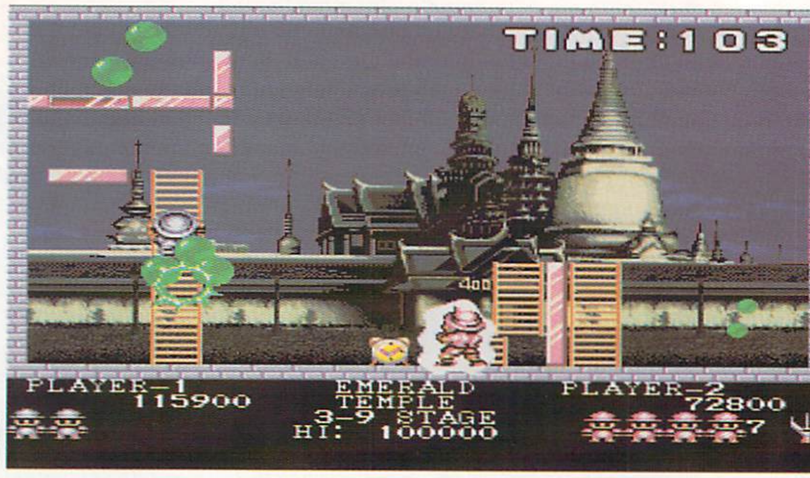
Graphics are razor sharp. Digitised screens abound as you start each level, try to remember your missus, and finally complete the game. The sprites for the characters are excellent, with Robocop gleaming away, and the totally impressive animation.

Sound

There are three slices of aural accompaniment (er, sound I think - Ed) to the game, though none run while the game is being played. All are good enough to one degree or another. The sound effects do stand out though, mainly because they have been sampled, and the resounding bark of Robocop's gun is suitably crisp.

Gameplay

Like the Scales of Justice, the gameplay is finely balanced. Sure, it's tough, sure, you keep getting squashed or falling into vats, but it's fun. It's worth dusting yourself off, girding your all-metal codpiece and giving those evil drug dealers a taste of lead-jacketed justice. Robocop 2 is just a wonderful orgy of non-stop violence.



Balloons aren't the only hazard

PANG

Publisher: **Ocean**
Price: **£24.99**

Dig out your Safari hat when playing Pang, but if you're into bloodsports forget it. In keeping with the sweet nature of Pang the animals have been substituted with a series of bright, cheerful and cute bouncing balloons.

The fun starts when you manage to strike the balloons with the futuristic harpoon you're armed with, as on impact the spheres divide into smaller balloons. These bounce at varying speeds and cost you a life if you're unfortunate enough to be hit by one.

Your mission is to wipe the bouncing bunnies off the face of the screen in order to progress in the game. There is a time limit though, which becomes tighter as you move through the levels, displayed at the top right hand corner of the screen.

To make your task more interesting, the balloons are well travelled and you have to seek them out in 17 locations from Japan to the island of Paques. There are 50 levels and although the scenery varies from the mountains of Mt. Fuji to skyscrapers in New York, it isn't particularly striking.

The platforms which contain the bouncing balls are rather like Arkanoid. Until such times as you've worked out which direction to attack, it seems a little out of place in this game.

What does work well in the scenery is the generous use of colour as there are 32 background colours to cheer up the dullest of days. The destination map which you return to after the completion of each level is simply drawn, but elsewhere the graphics blend in well with the design of the game.

The time, for example, is clearly displayed at the top of the screen, while the bottom section illustrates whether you have opted for a one or two player game, how many of your six lives you have left and your score. By having Easy, Normal or Difficult modes you can play at whatever speed suits you best, although you'll need reactions faster than the speed of light to progress by the aptly named Difficult route.

Your weapon can be cashed in and upgraded depending on which icon you pick up. There are masses of them including guns, dynamite, fruit and vegetables. So many in fact, that you are best not to collect too many different ones as changing firing methods in the middle of a tight situation often causes a loss of life. And you have start the current screen again from the start.

The laser attachment is good for zapping a multitude of large spheres provided you remember to keep to either side of the balloons and don't fire from too close a range if you don't want to get wasted. The icons not only enhance your arms capacity but give you other plus advantages like an hour glass which gives you extra time, and stop watches which freeze animation giving you the chance to give the bouncing blobs all you have.

Balloons aren't the only hazard though. A wide variety of birds and crustaceans like owls and crabs flap and scuttle around the screen but are easy to deal with whatever their nature.

The only problem with this game is that although it isn't very taxing skill wise, just calling for a little strategy and fast reactions, it is addictive in the same manner as Bubble Bobble or Rainbow Islands.

Graphics

Plenty of different locations with appropriate features but crudely drawn in places enhance the game. Still, cartoon like and enjoyable with nice animation of the bouncing balls, and neat vignettes of the characters between levels.

Sound

Sound is basic in terms of effects, but there's catchy background music continually playing, which as time starts to run out suddenly becomes more up beat.

Gameplay

Gameplay ensures Pang is horribly addictive. Easy to play skill-wise, it becomes increasingly more difficult as more and more balloons and obstacles appear. There are four skill levels to choose from which affect the speed of the balloons, but when there are 20 or so of the blighters closing in, even the slowest setting is fast enough.



Time is running out

POWERMONGER

Publisher: **Electronic Arts** Price: **£24.99**

For a long time it was as if Powermonger was going to be Populous 2. After all, the game featured the same style of graphics, and was being programmed by the same programmers. As it transpires, Powermonger is anything but Populous 2, and any familiarity with the original Populous will count for little in this game.

Miremer, your ex-kingdom has gone up in flames and molten ash, making you take your people to the seas in order to find a new home. Arriving at the top left corner of a large map containing 195 islands, your mission is to conquer each and every one, by trade, espionage, and naked steel in the vitals.

The first few islands are quite easy to conquer (if two thirds of the population are under your sway, this counts as conquered), but getting down towards the bottom right hand corner of the map, the opposing armies get bigger and nastier, requiring food and resources need to be skillfullymanaged. Conquer the final island in the bottom right corner of the map and overall victory is yours.

The display is familiar territory for Populous players, a 3D filled vector centre display shows the rolling landscape, numerous surface features, towns and centres of population, wildlife (sheep!) and of course, armies. This can be zoomed into and out, but if you try to move the map while on max zoom, you can easily lose track of what it was you were looking at. It's best to keep at maximum distance until a fight breaks out, as all your men and Captains are displayed anyway, no matter what the scale.

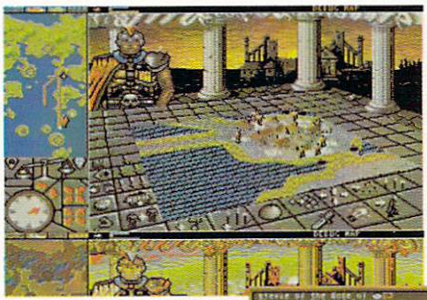
Initially you start with one Captain, who is in fact yourself. So if you get killed in battle then it doesn't matter how many others you have, its game over time, and a particularly gory end scene. Captains have three aggression levels (peaceful, neutral, aggressive) which affect how they trade, the numbers of men they will recruit in one session and quite how bloodthirsty they are when attacking a settlement. Although initially its great fun to send your men off on a mad killing spree, when you get to the harder islands you need to keep them to the minimum force so that all those defeated troops either end up forming a new army on your side, or are put to work harvesting the fields.

Troops can be recruited from any of your established settlements, but leaving them empty simply invites an attack by a rival. The troops will faithfully follow your Captain, but only as long as morale is high, food is plentiful and the weather is nice.

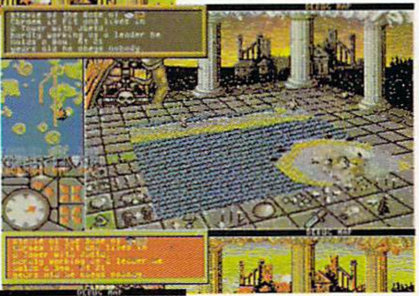
Forcing an attack in winter (yup there are seasons along with snow and rain) can lead to mass desertions if food is scarce, so food management as well as battle tactics need to be incorporated in to the successful powermonger's strategy.

The detail in the graphics and the continuously evolving world is astonishing. Every person in the game has a name, profession, allegiance and health rating, sheep wander the meadows, birds flock to and fro, and fishermen go out to sea. Added to this the sound effects are just brilliant. You can hear the livestock making theirown particular noises, the sound of wood sawing comes from forests where inventions are being made, and your Captain grunts 'Yeah', in tones designed to tell you how happy he is with your orders.

Powermonger really is a step beyond Populous, but it isn't as immediate. You have to read the manual, and work out and experiment on courses of action. Initially, the game is intriguing but baffling however, bit by bit you get drawn into the intricate, evolving and utterly marvellous world of Powermonger.



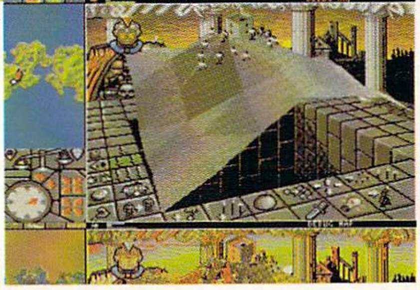
A budding career in rape and pillage begins



That's me!



You can examine any part of the map...



... from all angles!

Graphics

It isn't that the graphics look good, it's that there is just so much detail. In fact the small map of the current land is a bit too small for you to really see where everything is, and only the clever sound effects lead you to attack a nearby settlement rather than half a dozen stunted trees.

Sound

Sound is fabulous and no mistake. Where the graphics become too congested it is the effects that save the day. A large variety of effects alert you the various events taking place in your neck of the woods, and even the tone of your Captain's voice has meaning.

Gameplay

Powermonger is nowhere near as simple as Populous, and the straightforward, up and dice 'em approach may work initially but is doomed to failure later. If you like managing resources as well as fighting battles then this is a treat because the detail and interaction are amazing. I suspect everyone will buy this game, but a sizeable number will not play it for very long. For myself, and many other people though, Powermonger is nothing short of sensational.

SUPREMACY

Publisher: **Melbourne House** Price: **£24.99**

Barry The Bad, ruler of four star systems, Lord and Master over millions of cowering minions, sneered contemptuously as Rorn prostrated himself at the feet of his conqueror. "Forgive me, oh Barry, for my insolent attempt to oppose your will. My life and possessions are yours in victory. Do with me as you will."

Barry's sneer became a grunt of disgust. "You unspeakable insect!" he boomed, raising his hand to strike the fatal blow, "You will die very slowly..."

At that moment, however, a strange figure appeared in the entrance to his throne room. "Barry! You haven't washed those dishes yet, you naughty boy!" Barry groaned. "For God's sake, mum, I'm playing Supremacy!"

For all you power-hungry trainspotters and match box collectors out there, Supremacy is the latest sci-fi empire building strategy game to appear on the Amiga. Not a lot to excite the old cerebral cortex there, you might think. What makes this one so different from all the others? Well, in the final analysis, just about enough to elevate the game above the average.

It's in the sound and graphics departments that it makes its biggest impact. The intro sequence, showing a God-like person forming a new universe, is very nicely done, and is accompanied by mood-setting music of demo quality. From here, you might expect presentation to lapse a bit as the game gets under way, but with Supremacy this is definitely not the case.

You control things from what is basically a collection of choice screens activated by mouse clicks, and in some games these can be a tad dull. From the first screen onwards however, Supremacy is a bit of a visual treat.

Hugely colourful and packed with info, the screens are easily the best of their kind I've seen, and even include spot animation effects as an added distraction. Sound is provided as a series of one-offs, the best of which is the mellow female voice crooning 'message' every time one of your opponents wants to insult you, or a natural disaster occurs such as 'coach load of Leeds United supporters now disembarking in Bay 3'.

All very nice, and supported by excellent static graphics of the various ships you can purchase.

What lets Supremacy down a little is the gameplay. In strategy games, this is by far the most important element of all, and the best graphics in the world are to no avail if gameplay is sub-standard. I'm not suggesting that Supremacy is actually sub-standard, it's just that it doesn't offer anything especially new.



Things are looking good ... time to buy some hardware.

Your expansionist aims must be rooted in a sound economy, and in order to achieve this elusive miracle you must balance a variety of factors from tax levels to food production and population growth. To its credit, Supremacy keeps things tightly inter-connected, such that lower tax levels will increase morale, which will lead to higher levels of 'breeding', and therefore more people to draft into the armed forces. However, you soon find that those same lower tax levels have left you so skint you can't afford to equip your new soldiers properly.

As everything happens in real time, and you can see the effects of each decision almost instantaneously, the game is given a sense of urgency often missing from others of the type.

You soon find yourself clicking away madly at the mouse in an effort to juggle all the variables which affect progress towards universal omnipotence, and if your first attempts are anything like mine, things start hitting the floor quite quickly.

That, unfortunately, is that. The presentation initially generates enough of the 'Cooorrr!' element to keep interest levels high, but once this has worn off, content and gameplay fall just a little short of the expectations thus created. The Amiga's sound and graphics capabilities are utilised more fully than is usual with strategy games, some of which set out to be as bland as possible, but its strategy element, on which it must stand or fall, is just not original enough to warrant the window dressing.

All in all, Probe have taken an average game system and married it to better than average graphics to produce a game which, rather than standing head and shoulders above the competition, shows just a hairline and the odd eyebrow.



The instrument of oppression or the answer to a despot's dream?

Graphics

Very nice, with great use of colour and fine animated effects. The graphics are the best feature of this game and would look good anywhere.

Sound

Spot effects are good, and you're saved the normally painful use of continuously playing tunes. Limited but effective.

Gameplay

This is where the game falls down a bit. No new stuff here – it's all been done before. The real time element is OK, though.

DAYS OF THUNDER

Publisher: **Mindscape**
Price: **£24.95**

If I had the licence to produce a film tie-in game starring Tom Cruise and some attractive girl, I would make sure that there were plenty of digitised pics showing both leading lights. I would also incorporate some of the plot and ingredients that made the film so memorable.

Faced with the problem of finding anything memorable in Days of Thunder, Mindscape has instead side-stepped the entire problem by simply producing a stock car racing game with solid 3D graphics. No pictures of Tom Cruise with his manly jaw anywhere. Methinks this is a big lost opportunity here. Someone ought to tell the folks at Mindscape that if you proudly flag a game as being "the only official game of the film to give you all the excitement of the big screen", then you should deliver something more than a rather tepid and largely anonymous racing game.

There are five race tracks including Daytona – fast banked curves around a central lake, Atlanta – deep south, blistering temperatures and slave plantations, Phoenix – a one mile oval where speeds of over 200 mph are reached, Talladega – cost $4 million to build and there are apparently 20 million people living nearby, and Charlotte – seats 118,000 people and is in 31 year old racing track. Those are what you have to race around to bring home the stock car Championship.

On your first appearance at a track, you need to set a fast enough time to qualify, which is easier if there are more cars racing (but that makes the actual races themselves harder). Unfortunately, you are not told the time you need to achieve in order to qualify, but at the end of a lap that is too slow, you're told that you haven't qualified.

Still, after five laps, gradually getting faster and learning how to navigate the very strange angled bends, you should be ready for the parade lap. Don't bother driving around yourself because if you get out of race order position, you're instantly disqualified. This lets you see reasonably good pictures of a stock car, but it means you have to qualify all over again in the next race. Leave the controls alone and the computer will drive you around. And after that, you're off. You have five gears, accelerator and brake to worry about. Just getting round some of the corners takes some skill, never mind over-taking the opposition.

The graphics are solid 3D for the most part, and look like a pre-production version of EA's Indianapolis 500. What I didn't like was the representation of the crowd in the stands. This consisted of pixels of rapidly flashing different colours. Marvellous.

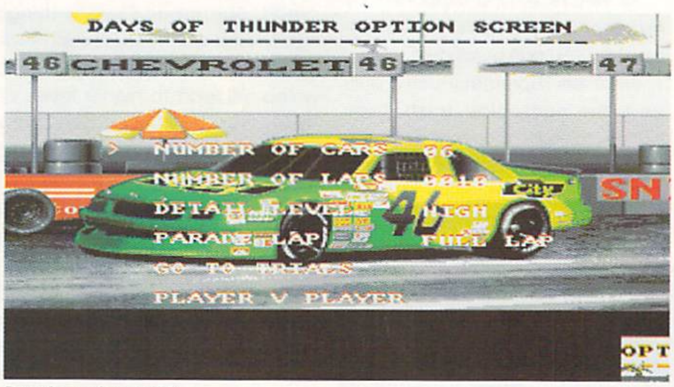
Scrapes in the car are inevitable, so pulling into the pit-stop is often required during a race. As well as being repaired, you can also alter tyres to affect handling, change the steering response, and refuel.

So it all continues around the course until the required and number of laps have been completed. You are then either on your way to the Championship, or the dole office.

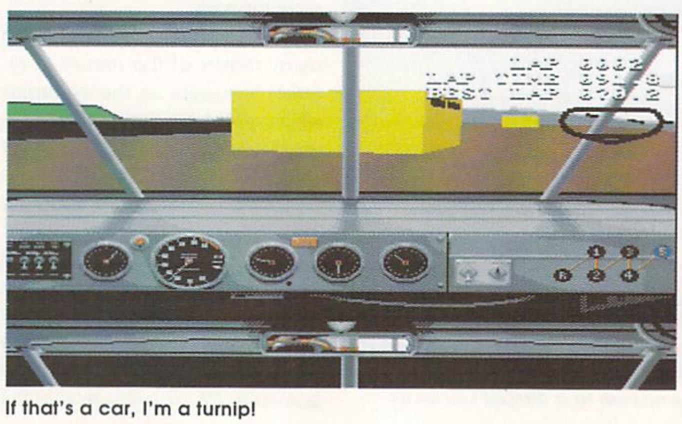
An amusing aside is that you can race against a friend on another machine via a null modem cable. Mindscape describes this as a unique feature!



This is me . . . honest!



Ready, set, crash!



If that's a car, I'm a turnip!

Graphics

The graphics are not that great to be honest. On High Detail, there simply isn't that much detail and the game is fairly pedestrian. On Low Detail there's hardly any and the game moves at a reasonable lick. The 3D stuff is average with only the pics of the cars being notable. No Tom Cruise either.

Sound

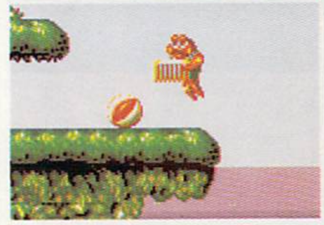
Whatever the title music is, I hope it isn't supposed to have come from the film. It does sound vaguely familiar but that is probably because David Whittaker writes an awful lot of music. Sound effects otherwise are adequate.

Gameplay

Gameplay is sort of a cross between Stunt Car Racer and Indianapolis 500, but not as good as either. Sluggish until you turn down the detail, it then lacks atmosphere. A reasonable driving game, naturally fun when going head to head with a friend, but there are opportunities missed a-plenty in this film conversion.

James Pond

Supplier: **Millenium** Price: **£24.95**

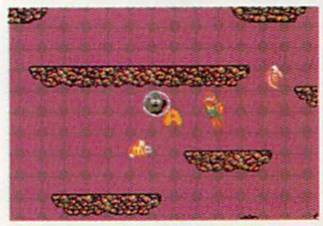
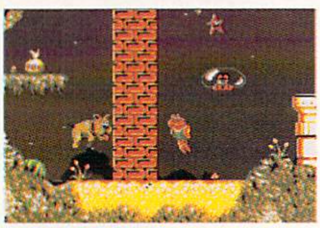
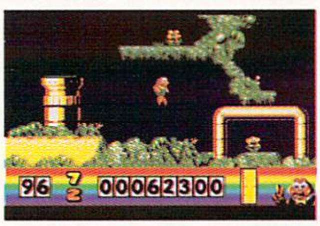

After the rannygazoo over the witless Greenpeace game, which did the enviromentalists more harm than good, it's refreshing to see that most puerile of game formats, the so called 'cutie', being used to promote simplistic environmental messages. James Pond is a fish with a mission. Twelve missions in all, which range from rescuing lobsters to helping fish to safety before radioactive canisters send them on a mad feeding frenzy, plugging leaks in oil tankers and rescuing mermaids and orchids.

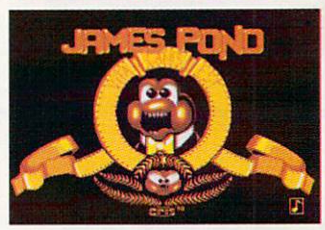
Well the music is suitably aquatic and impressively jolly, but it's the excellent graphics which really deserve a mention. You really feel this is an Amiga you're playing on, rather than the Sega-like graphics of games like Pang. Incredibly colourful, they also feature eel-smooth parallax scrolling.

As well as the nasty humans seeking to stop our fishy hero, there are nefarious aquatic foes to combat, which can either kill or stun poor James, costing him valuable time. To these he can blow bubbles, which encapsulate said foe. Swimming over the bubble destroys the enemy within.

There are secret caverns to explore for bonus points, and plenty of surprises along the way. If you are looking for a bright and colourful, but most of all hugely entertaining game to play then check out James Pond, environmental messages and all. He's far more tasty than Haddock and Chips.

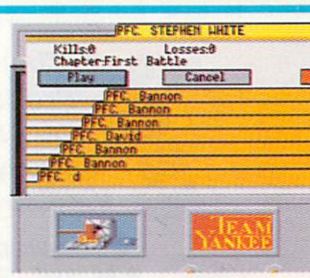


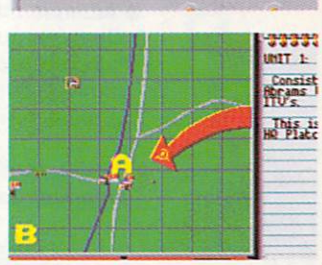





Team Yankee

Supplier: **Entertainment International** Price: **£24.95**



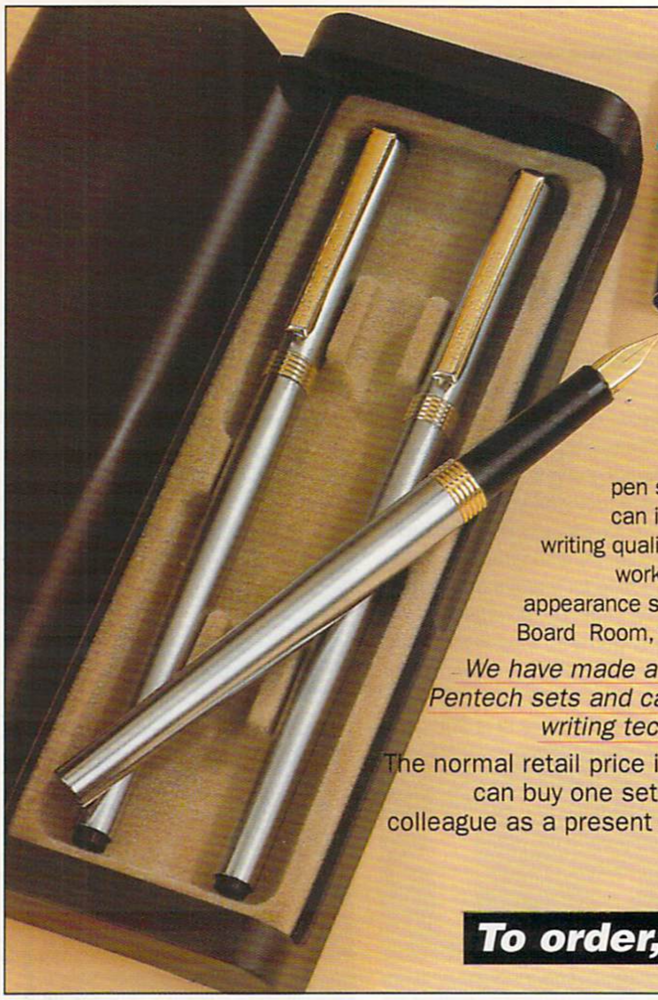



Released around the same time as Microprose's M1 Tank Platoon, Team Yankee offers a different kind of tanking experience, one which seeks to evoke the atmosphere and tension of real tank battles. Much more so than something so realistic you have to pause the game every two minutes just to see which key to press next.

Team Yankee is based on the book of the same name by Harold Coyle, and some game packages actually contain a copy of the book. While I would recommend reading the book prior to playing, it isn't necessary as the plot is fully explained before each battle. The game includes excerpts from the book, which is also written in a pretty turgid style, so don't rush out looking for it.

The story concerns the commander of Team Yankee, which consists of M1 A1 Abrahms tanks and mechanised sections. These are split up into four units, each containing four vehicles, which can be ordered into a variety of formations. Thankfully they do follow your lead, so the prospect of directly controlling 16 vehicles is largely avoided.

Small screens appear for each unit leader, which can be expanded so you can see what is going on. Strangely enough, the gunnery system of simply pointing the mouse cursor and clicking, while not being in any way realistic, does stop the game from bogging down, and with Soviet shells landing all around, the objectives of simulating the tension and excitement of a tank battle are fully met. Superbly entertaining and a welcome alternative to Tank Platoon.



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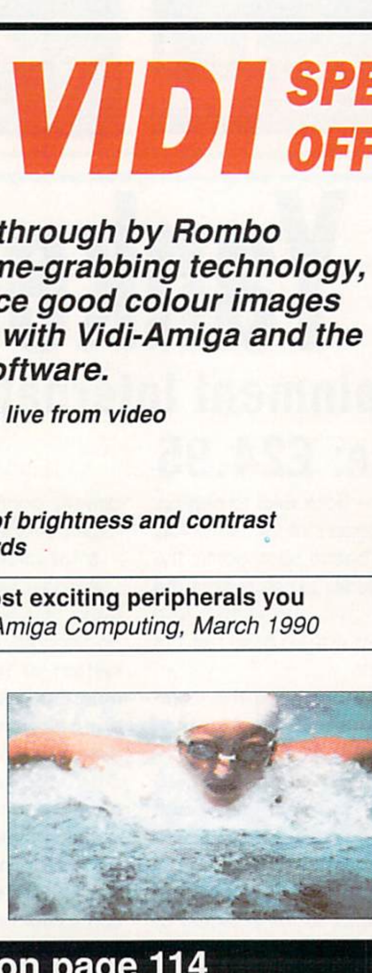
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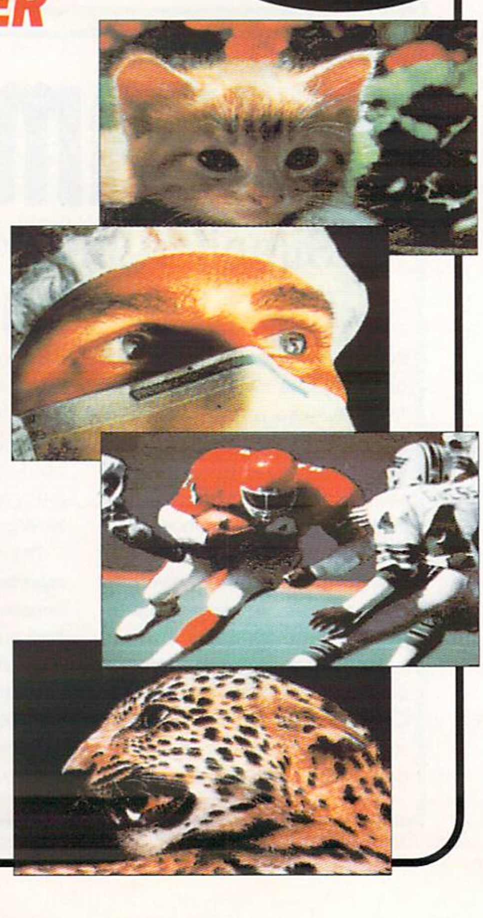
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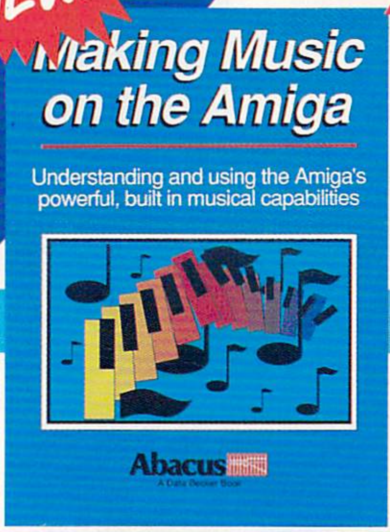
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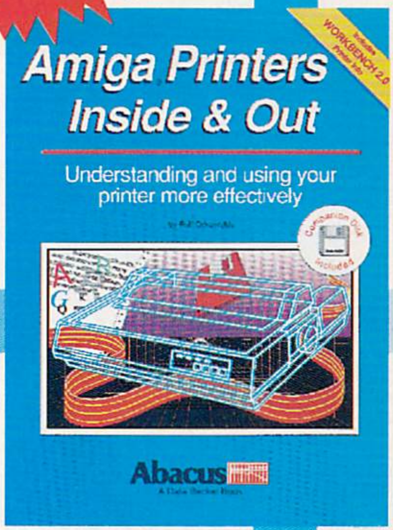
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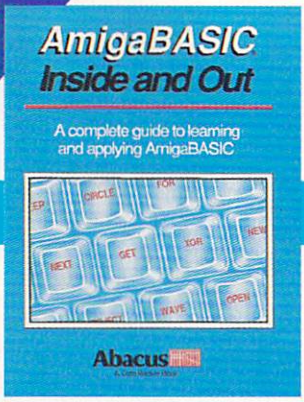


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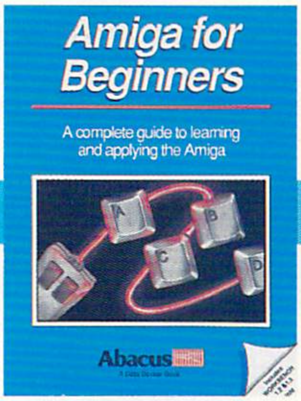


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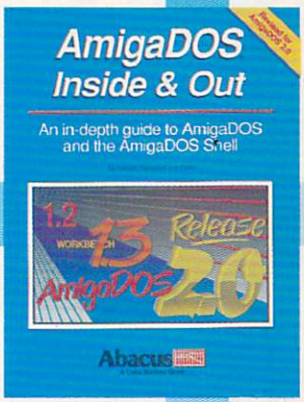
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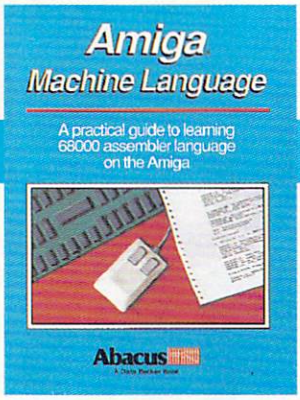


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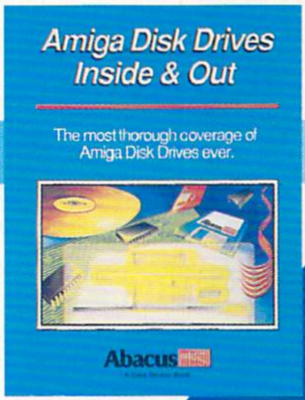


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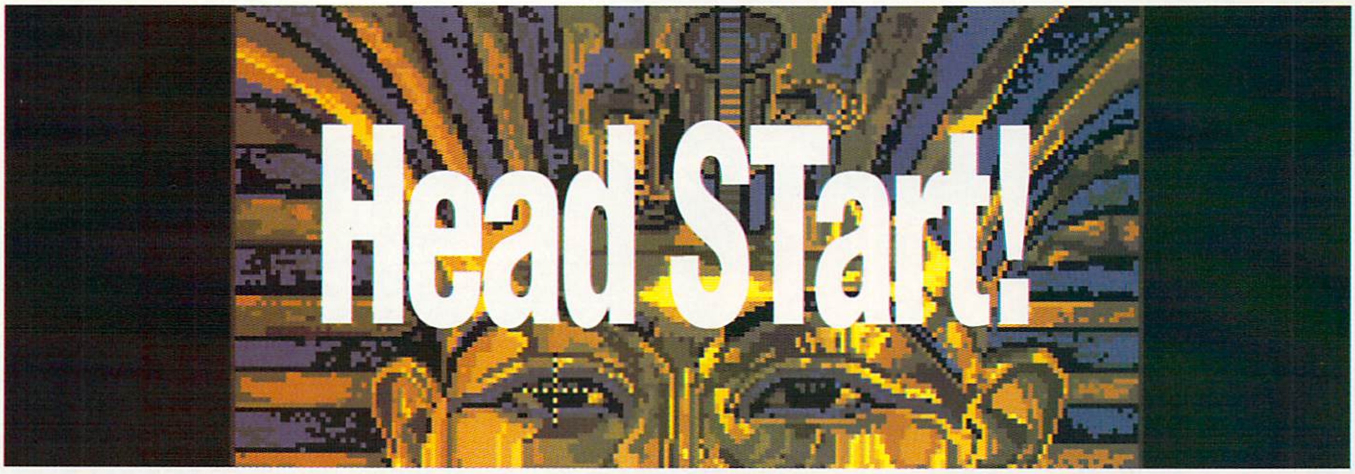
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Head STart!

Jason Holborn puts the latest software-based ST emulator through its paces

Emulators, emulators, emulators! Seems that not a single month goes by without yet another emulator appearing on the scene. We've got PC emulators – read the review of ATonce elsewhere in this issue – C64 emulators, BBC emulators, Macintosh emulators, QL emulators and even a Spectrum emulator. Makes you wonder when someone will come up with a Cray emulator!

The latest machine to receive emulation treatment is the Amiga's closest cousin, the Atari ST – you'd be surprised how closely they are related!

Last month saw the release of the Medusa Card, a software and hardware combination that transformed the Amiga into an ST. This certainly worked, but there was one major problem with it: the price.

Coming in at just under £200, it certainly wasn't cheap. You could easily pick up a real Atari for just a few pounds more.

Hot on its heels is Chamaleon from German software publisher Maxon. Hoping to steal sales from Medusa, Maxon claims that Chamaleon will work just as well as the Macro Systems hardware-based emulator, yet it still manages to sell for £100 cheaper than its rival.

Sounds pretty impressive so far, but the thing that makes Chamaleon so special isn't its price, although that too is impressive, but the fact that the whole process of emulating the Atari is handled entirely by software.

The Chamaleon package consists of two disks and a rather short manual describing the process of setting up. For those of you who have never had the pleasure of using a real ST, there's even a tutorial section covering the basics of using the Atari desktop.

So you've got no excuse to pop around and beg your friendly Atari owner for a crash course in all things ST.

Setting up Chamaleon would be pretty straightforward if it wasn't for the fact that Maxon doesn't actually supply the necessary utilities to make this possible.

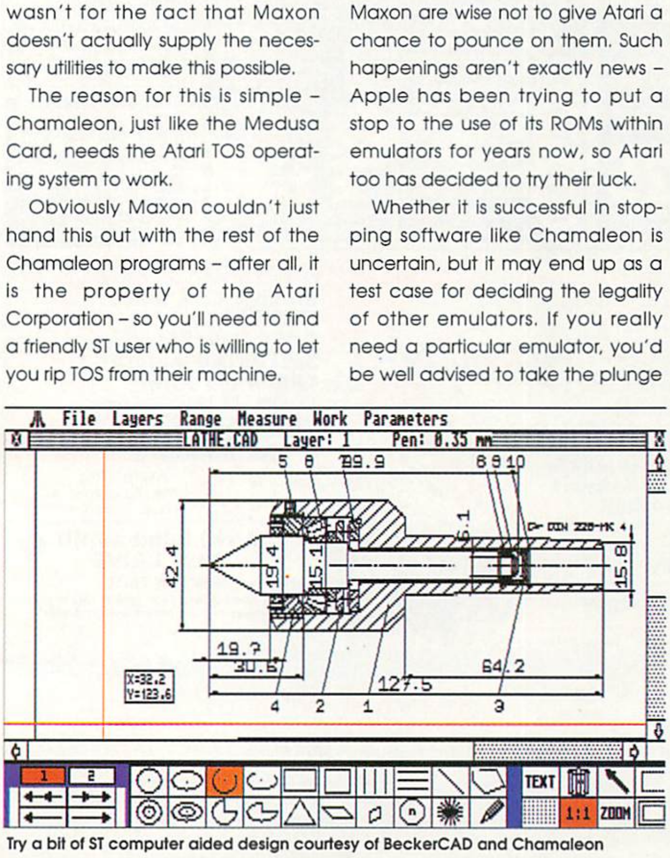
The reason for this is simple – Chamaleon, just like the Medusa Card, needs the Atari TOS operating system to work.

Obviously Maxon couldn't just hand this out with the rest of the Chamaleon programs – after all, it is the property of the Atari Corporation – so you'll need to find a friendly ST user who is willing to let you rip TOS from their machine.

Thankfully this isn't as painful as it sounds, and all that's needed is a small utility that will dump TOS to disk as a binary file. Problem is, Maxon doesn't even supply you with this utility, so expect problems.

According to a source in Germany, Atari's lawyers are already looking very closely at both Chamaleon and Medusa, so Maxon are wise not to give Atari a chance to pounce on them. Such happenings aren't exactly news – Apple has been trying to put a stop to the use of its ROMs within emulators for years now, so Atari too has decided to try their luck.

Whether it is successful in stopping software like Chamaleon is uncertain, but it may end up as a test case for deciding the legality of other emulators. If you really need a particular emulator, you'd be well advised to take the plunge now. Leave it too late and you may find that it's been withdrawn from sale.



Try a bit of ST computer aided design courtesy of BeckerCAD and Chamaleon

Once you've found a program which will extract TOS from an ST – I used the GETTOS program that came with Medusa – the resulting TOS file must be copied to an ST disk under the filename TOS.IMG.

Virtually all versions of TOS should work fine, although I was unable to test this as my review copy refused point blank to work with English TOS files. Thanks to a friendly ST user in Germany though, I was eventually up and running.

With luck, you shouldn't have to suffer the same frustration as Maxon assure me that fixed versions should be available by the time you read this article – check this when ordering though.

Getting started

Turn on your Amiga, insert the program disk into the internal drive and Chamaleon will then boot. After a few seconds disk access it will then ask you to insert the Atari-format diskette containing the TOS.IMG file.

If you do as it asks, Chamaleon will blank the screen and start to read the file into memory. If everything goes well, you'll now be that bit nearer to ST emulation.

All that now remains is to choose the resolution you wish to work in. The ST supports three screen resolutions – 320 x 200 with 16 colours, 640 x 200 with 4 colours and 640 x 400 with two colours – although you need two monitors to display all of them.

Thankfully though, Chamaleon allows you to use all three on a standard Amiga monitor, so there's no reason to buy any extra equip-

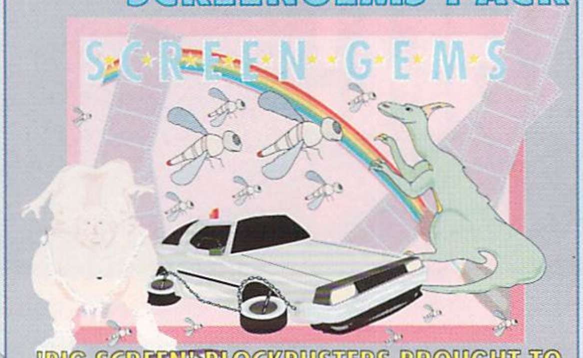


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ment. A quick tap on the appropriate function key then brings Chamaleon to life.

From here on, you now have what amounts to a real Atari ST. Obviously, you can't use ST peripherals, excluding things like printers and modems, of course, but the world of ST applications software is now within your reach. First though, a look at the Atari desktop.

For those of you who haven't been lucky enough to play with an Atari, the Desktop is a WIMP-based front end – the Atari Workbench, if you like – that uses the same basic principles of pull down menus, windows and icons for most of the machine's operation.

There's not a great deal of difference between the Desktop and the Amiga Workbench, although I feel it is fair to say that the Atari Desktop is somewhat simpler than Workbench – especially Workbench 2.0!

I don't want to get into any 'my machine's better than yours' debates, but I'm sure that even quite a few ST owners would agree that the current Desktop environment stinks – the TT's Desktop is very sexy though!

After a quick trip to my friendly ST neighbour, I came back to Chamaleon arms filled with software to test on it. I was actually pleasantly surprised at how well Chamaleon coped.

Most applications ran without problems, although some did 'bomb out' or even guru the emulator completely. This is hardly surprising. After all, Chamaleon is completely software based.

ST compatibility

The list of what did actually work was still pretty impressive. I managed to test programs such as Becker CAD, GFA BASIC, Deluxe Paint ST, Protext 5 and even Pro-24, all of which appeared to work fine.

The emulator seemed to run them slightly slower than a real ST, but the difference wasn't really that noticeable. Quite an achievement when you realise that the Amiga itself runs 10 per cent slower than an Atari – the Amiga custom chips make up for this.

Chamaleon appears to run about the same speed as the Medusa Card, which Macro Systems claims to run about 90-95 per cent of the speed of a real ST.

Some programs don't work unmodified, however. Supplied on the Atari-format disk that comes with Chamaleon are a number of patch programs that fix certain well known programs to work with the emulator. Patches are supplied for such programs such as GFA-BASIC, Signum Script! and so on.

Using them is pretty simple. Just click on the appropriate patcher program and the application is automatically fixed. Obviously it goes without saying that you should only feed back-up copies of your Atari software through these patcher programs, otherwise you could well end up with an Atari program that won't even work on a real Atari!

Now for the bad news. There are of course some programs that don't work under Chamaleon. For starters Atari games won't work.

Even if Chamaleon managed to cope with the heavy disk protection systems used, the game would fall over as soon as it realised that there's no ST hardware to address. Some PD games that don't 'bash the metal' might just run, but the general rule is that games are a non-starter.

This isn't exactly surprising. After all, no matter how advanced the Amiga hardware, the fact is that it isn't an Atari. If you want to run ST games, then you're probably better off buying a real Atari. Although any Amiga owner who does buy an Atari to play games on needs his head examining.

In the early days of the Amiga, people cried out for an ST emulator because the Atari had all the decent software such as word processors, databases, MIDI sequencers – the list could go on.

These days though, the reverse is true. Atari owners look on enviously at such packages as DPaint 3 – ST DPaint doesn't really compare to the Amiga version – Music-X, DigiPaint 3 and Professional Page.

So what is the point in emulating an ST? There are a few decent applications out there, Calamus and Cubase spring to mind, but not enough to warrant spending almost £100 on an emulator.

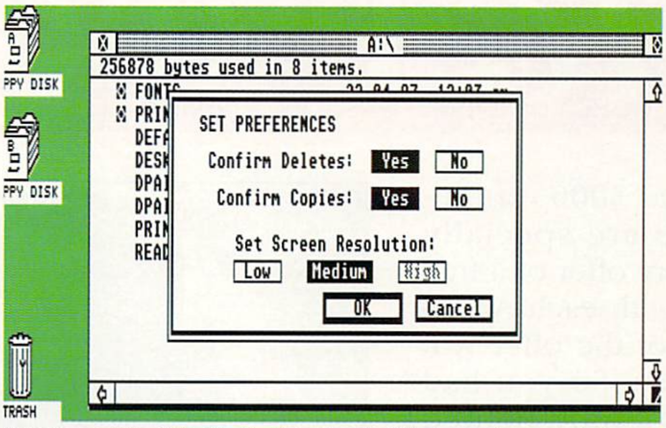
In the end the fact remains that Chamaleon does what it sets out to do – to provide a reliable and fast ST operating environment on the Amiga. It's highly compatible, fairly easy to set up once you've found a TOS ripper, and runs software at an acceptable speed.

If you really need ST emulation, then Chamaleon is the one to go for.

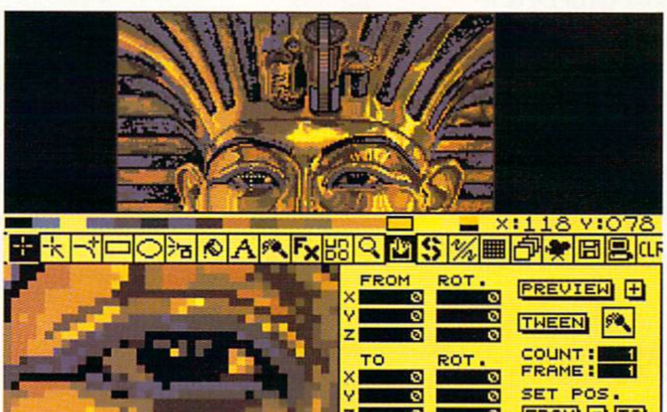
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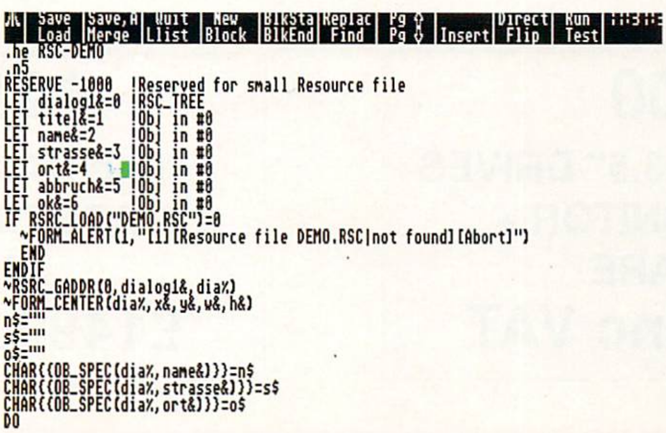
The Chamaleon title screen



Yes folks, here's the ST Desktop in all it's glory - but this time running on an Amiga



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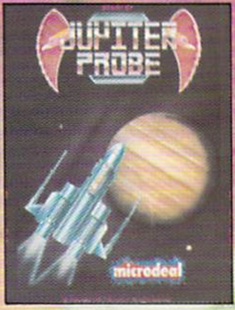
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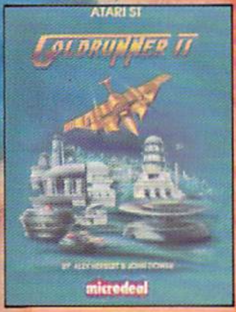
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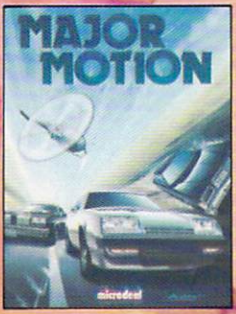
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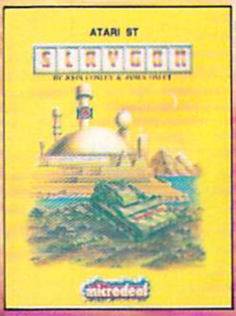
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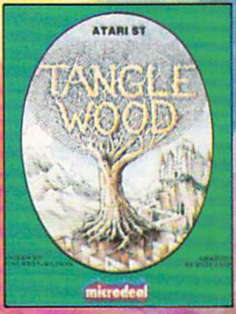
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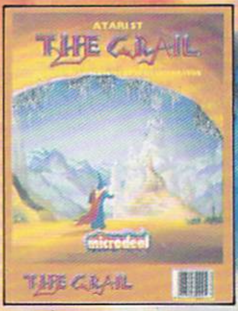


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Musical MEDley

From Chopsticks to Chopin - it's all in Amiga Computing's guide for the musician...

OK, all you lucky folks who bought Amiga Computing's December issue are probably familiar with Med213, the great music utility we gave away on the cover disk. If you're not, get hold of a copy now!

The main aim of this article is to take a complete musical beginner from first notes to a finished piece of music. To do this we'll be working with Med213, which dedicated readers already have, don't you? We gave it away on the cover disk, but you don't have it, check out any good PD library. I'm – hopefully – going to take some of the mystery out of the process of creating music.

Basically, putting together a tune is a simple process which, through technology and its inevitable jargon, has become somewhat a secondary consideration in comparison with equipment. As a result, most beginners are left with the idea that to create anything worth doing, you need a huge pile of MIDI equipment, and a First in Electronics, as well as music. This is not the case, as I hope you'll find.

There's thousands of would-be talented musicians out there who have never played a note, simply because of a lack of opportunity, or perhaps because of the conventional skills required. Much to the disgust of many an old guard muso, these conventional skills are no longer required in certain areas, thanks to your Amiga, and the sequencing packages it can support (Med213 being a fine example).



Remember, large amounts of CPU time can be saved by turning off screen effects

I hope to provide a guide to the production of a piece and creative technique rather than a second manual for Med. With this in mind, I suggest you print it out if possible, as this will speed things up considerably, until you're familiar with the program. Use fan-fold paper as there is quite a lot of it to print, but don't let that worry you. If you don't have a printer you could always load the document file before Med213. You can then alternate between the program and the instructions using the Amiga key and N or M. This will use up RAM but at first, though I doubt it will cause too many problems.

After loading Med213, you may be struck by two features, the worrying complexity of the control panel, and how incredibly ugly the whole thing looks. The first thing to do is click on the Misc button and alter the preferences. After that things may look a bit more friendly and the preferences will be stored and reloaded with your masterpiece.

The next step is to load in some samples. This is done by loading the Song24 demo on last month's cover disk. Not only will you have its component samples in memory, but also a chance to pick up a few ideas, or perhaps what you should avoid from the demo. When you're ready, clear the song in the Misc section, making sure you leave the samples in. Now the fun really starts.

The first thing to do is pick a sample, let's say 'Ahh Vox', then play around until you find a little melody you like, the theme tune to Close Encounters say, which requires you to press w, e, q, z, b. If you can come up with something original it would be better, as this tutorial is not based around a particular tune. Once you're comfortable playing the piece, it's time to start.

Tempo

One of the most important things to do before recording anything, is to set the tempo, so your first job must be to give yourself a stick count to give you a point of reference when you start to play. I suggest you do this on a separate block, with, let's say, a clap sample on one track to count you in.

Select a new block, enter edit mode, and Play Song. The present block will scroll by. Wait until the stick count, the new block will appear, then play your tune.

Now one or more things may have happened depending upon how diligently you constructed the tune.

Either the piece when played back may be perfect, and the block may cycle perfectly without interruption – this is unlikely – or the piece was too long for the block, and the cycling of the block caused the end to overwrite the beginning of the piece. This can be rectified by clearing the channel, lengthening the block in the Block section and re-recording the piece.

A third possibility is that the block was too long for the piece, producing a long pause between plays. Simply delete the additional steps in the block until the the block cycles smoothly.

Tempo hints

When you first play back the tune you may find that it sounds different to what you actually played. Notes may have been moved slightly and the track in general may sound regimented and mechanical. This is a sure sign that the tempo is too slow. Because of this, your Amiga has been forced to place notes, which fell between two steps in the sequence, into the closest free step, causing the changes you can hear.

The easiest way to combat this is to re-record, increasing the tempo until you hear exactly what you played. This will possibly require the lengthening of the block and the stick count, if you're using one.

Sometimes, it can be a good idea to place the first note in step time on the first step of the block, rather than trying to play it live. Thus, when you come to play the tune you will hear the count and the first note, enabling you to fill in the rest live. This makes life a lot easier when you start copying blocks by keeping everything in the same time signature.

When you first record a tune you may find that the gaps between the notes are relatively short, perhaps only two or three spaces on average. The tune may sound perfect, but it probably a good idea to double the gaps between the notes. I know it sounds a bit drastic, but you'll thank me in the end.

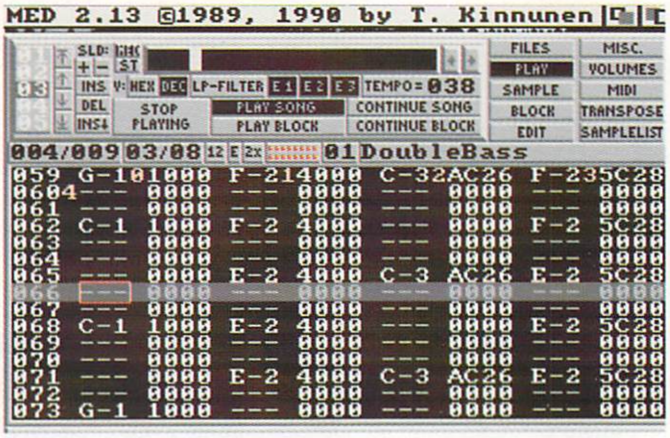
If you're lucky, your tune will fit in a block under 128 steps. If so, you can use the Expand option in the transpose section to double the spaces between the notes. The problem with having the notes too close together, even when they're correct, is that when you progress with the piece you'll no doubt want to add fiddly bits (technical term). With other samples, it's at this point you may discover that there is simply not enough space in the sequence to put the new notes where you want them.

When this happens there is nothing else to do but reach for the hankies, followed by the off switch, and start all over again. Increasing gaps will mean lengthening the block, altering the stick count and doubling the tempo, the end result sounding exactly as before. Ten minutes of work at this stage, can save hours of misery later.

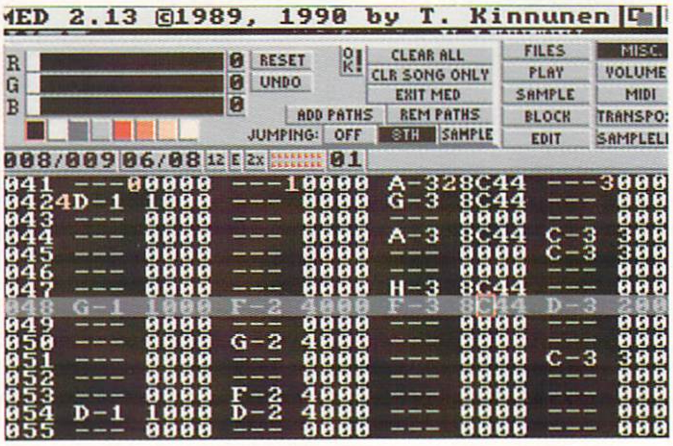
When writing a piece don't feel



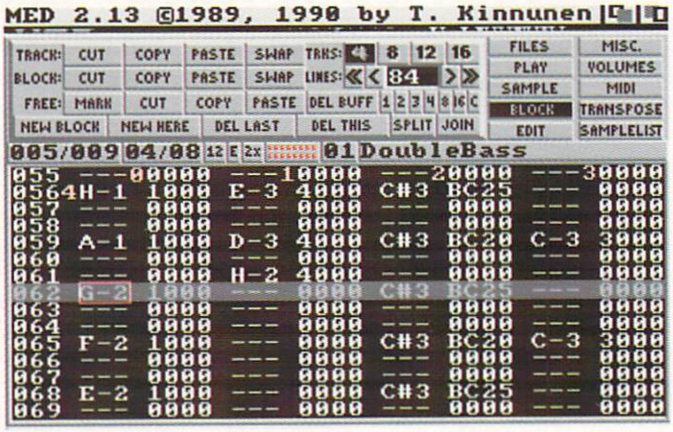
Don't forget to set instrument volumes before you start to compose



Try to keep gaps at the beginning, you'll never know what you'll want to add later on



Add that personal touch with some new preferences – it certainly needs them



The block section, once mastered, can save hours of drugery

it's necessary to record everything live on each channel. Often it's easier and quicker to enter the notes step by step rather than spend your valuable time recording and re-recording the same block over and over again.

Song construction

Most of the readers who've dabbled in music may be thinking at this point, "why hasn't he done the drum track first? I always do that first" Well, I admit that having something to keep you in time is useful, so I suggest you use a click track. This is simply an extended stick count which runs through the piece.

The trouble with producing the drum track first is that they can dictate the way the rest of the track is arranged. If the drums are one of the main features of the piece you're working on you may want them to dictate the pace, so by all means do them first, but if not they're better written around the tune.

The reason for this is to keep things original rather than predictable. This can happen if you're forced to work around the music rather than write the music around the drums. You could find yourself writing drum patterns you may never have thought to otherwise use .

By now you'll probably have noticed my obsession with trying to keep the creative flow as free as possible and this really is essential. Original ideas are the life blood of good music, which is why restrictive practices, and consequently habits, must be avoided. The end result of such practices is invariably boring, predictable and repetitive.

To help combat falling into the trap of producing predictable arrangements, I have produced the three note major and minor chords. First save your piece, then clear the song, leaving the samples. Now enter a note, say G on the first channel, and listen to it. Sounds fine? Now add the B and the D on channel two and three to form your first G major chord. Play the block and hear the difference. Try messing around, perhaps stagger the notes on each channel, experiment with a short tune, just single notes at first then build the notes into chords. Using chords can open many opportunities – have fun!

For some strange reason the note B appears as H in Med213. I haven't the faintest idea why this

should be so, but it's worth remembering.

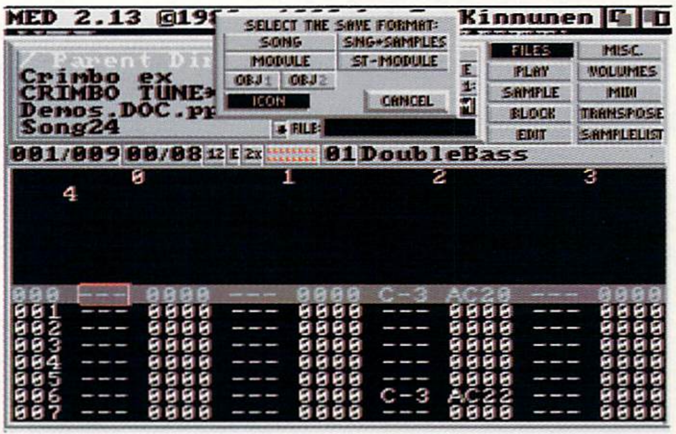
Creative use of volume

You may find it a good idea before starting a piece to reset all the volumes to around 40, reducing the general volume level by a third. The reason for this is that when you have written a piece, you'll want to mix the levels of the various samples. If your levels are already on full, pushing things up in the mix can be a tricky business.

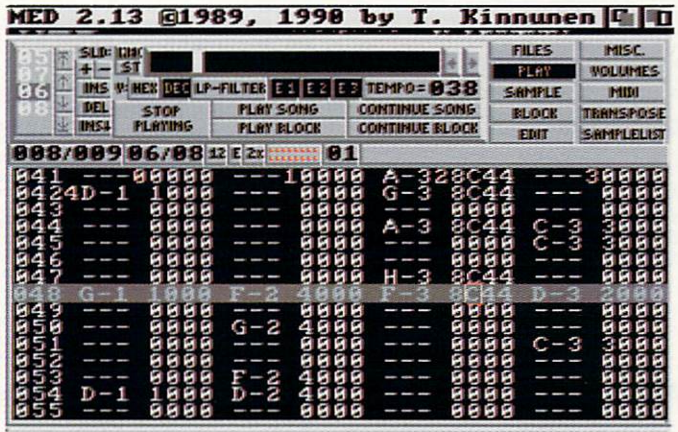
One of the main complaints about a lot of computer generated music is that they sound 'computer generated', mechanical and lifeless. This is not the fault of the machine, but rather that of the people who write the music. With a little effort it's possible to put real feeling into your creations.

One of the best methods of doing this is by varying the volume on individual notes. This isn't quite as painful as it sounds. After finishing a block make any changes before copying, then when you do copy the changes will go with it.

The best way to get an idea of how this should be done is to listen to real people playing their instruments. A bass player, for example, will play certain notes in his bass line louder than others. You should listen for this and try to do the same. Change the volume of individual notes by using the command option described in the program docs. Experiment with various commands such as slides, arpeggio's, portamento and so on. All these effects can add life to the piece, so try them out.



Be careful with save and load, time can be gained and lost with a click of a button



The letter highlighted in the central bar is just one of many effects available with Med

On this month's cover disk, you'll find a new demo 'Crimbo Tune', written by yours trully, (but if anyone asks I'll deny all knowledge). You're more than welcome to mess around with it. Also feel free to make use of the samples I've added several extra samples, which are not part of the tune, to help you to build a sound library, feel free to use them.

So, there's a basic introduction to starting out. Armed with the above, you should be ready to enter your first tunes. Experiment and see what comes up. Working with Med does have its limitations, but it's the ideas that count. A bad idea does not get any better no matter how much money is lavished on it.

Next month I'll tell you about the construction of complete 'arrangements'.

Article and cover disk tune written and arranged by Paul Austin

Chord	Major	Minor
G	G B D	G A# D
G#	G# C D#	G# B D
A	A C# E	A C E
A#	A# D F	A# C# F
B	B D# F#	B D F#
C	C E G	C D# G
C#	C# F G#	C# E G#
D	D F# A	D F A
D#	D# G A#	D# F# A#
E	E G# B	E G B
F	F A C	F G# C
F#	F# A# C#	F# A C#

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GFX 90 : The year of the Amiga?



Widely acclaimed as the only computer graphics event worth visiting, Jason Titchberry found out what the future holds for pixel punchers

There is always one event that is well documented in any graphics aficionado's diary. Try to meet them on those days and you'll hear stories of sick aunts, sudden and violent flu attacks – unavoidable business elsewhere perhaps. Written in bold legend among the nether regions of their personal organisers however, will be just three letters: GFX.

This is the time when the graphics world unites in a desperate attempt to persuade everyone that it isn't all just about pretty pictures, which of course, it is.

DTP, CAD (computer aided design) and graphic design are represented by names from several continents. You're not likely to catch the likes of Agfa at a 16-bit show but you'll find them here along with names like Dowty, Hewlett Packard, Ashton Tate, Sony and Hitachi. Pretty pictures are big business.

As anyone in the know knows, the area where Amigas have had the biggest impact so far, at least professionally, is in graphics, particularly desktop video. While the Amiga may still lag behind Apple's Mac and the PC in terms of business sales, the machine has become really popular with animation houses which explains why IFFs keep appearing on Channel 4.

This year brought not only the launch of two new Amigas, the A3000 and the A1500, but also the promise of two even more powerful machines, the Tower A3500 and the Unix-compatible A3000UX. This commitment to leading-edge hardware ensures a solid position for Commodore's Amiga.

Harlequin

One of the most exciting pieces of kit for anyone interested in professional standard graphics was displayed by Amiga Centre Scotland.

The Harlequin is a 32-bit frame buffer on a Zorro II card ie, – it fits internally into a 1500/2000/3000 but you can't use it with a vanilla A500. This allows you to display



broadcast-quality images at a maximum resolution of 910 x 576. But wait, there's more. The frame buffer handles up to an amazing 16,777,216 colours.

A few quick calculations will reveal that this is the number of colours available for a 24-bit image. So why does the ACS Harlequin use 32-bits? The extra eight bits make possible a whole range of other functions – as an alpha-channel to provide 256-level linear keying for anti-aliasing the signal or perhaps as control data for other video sources and genlocking.

The Harlequin comes with software enabling IFF files to be transferred to the frame buffer including 24-bit IFFs which you are likely to get from ray-tracers, scanners, digitisers and so on, and a library and device driver for programmers. The price? A mere £1,395.

Virtuality

If you were tired of the real world you could always enter a virtual reality, courtesy of Virtuality Limited. A snip at £20,000 and apparently the cheapest of its kind, the Virtuality system consists of a base unit and a large headset containing two miniature colour ultra-high quality liquid crystal displays.

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can actually walk around his unreal world, and a sit-in unit, where users control a vehicle of their choice.

The heart of the system is an Amiga 3000, although Virtuality aren't really keen on letting people know this – the fact wasn't mentioned when the system was previewed on BBC TV's Tomorrow's World.

The Amiga handles all the sums and control electronics, while a custom graphics board drives the stereo-visual displays. A big plus for the engineering fraternity is the ability to enter standard CAD designs and actually walk around them. The system is already being sold to deep-sea divers, nuclear physicists and anyone else with enough dosh.

The assembled were treated to the most exciting computer displays some of them had ever seen – when these babies hit the arcades, it's going to be a whole new ball-game. The only drawback with the system (apart from the price) is the weight of the headset – hardly portable and a bit painful on the nose!

Commodore

Apart from demonstrating some interesting CAD software, Commodore had the A3500 on show again, still without its production casing of course.

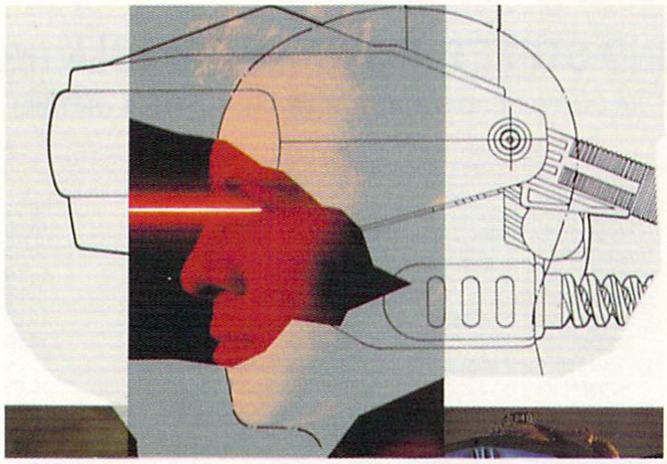
Also there were a few networked A3000s running Amiga vision to show its potential as a true multimedia authoring system.

Hiding on the CBM stand, apart from Real Time Graphics, was Chromacolour, whose animation story-boarding set-up features in the very popular Rolf's Cartoon Club. A cut down home user system is still in development, presumably with the backing of Commodore, but Managing Director Dave Prudence wants to be sure to get it right before the product hits the streets.

Also making a discrete appearance was a prototype version of Professional Page 2.0, as mentioned in last month's Almanac. The new version includes such features as object rotation, style tagging and Pantone colour matching. Perhaps its presence on the CBM stand means some sort of bundle deal is in the offing?

Real Time Graphics

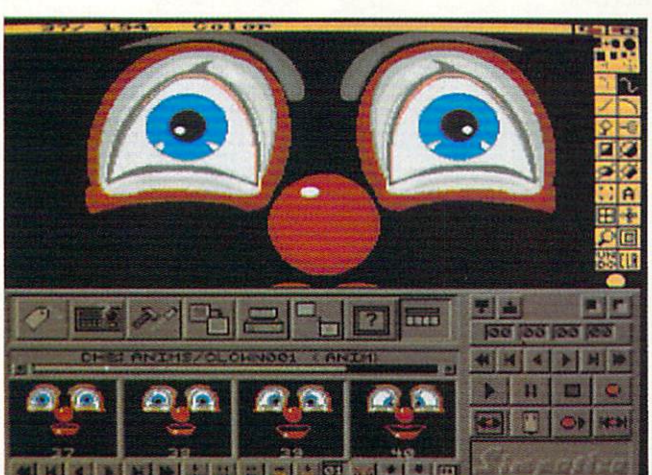
Real Time Graphics is a company specialising in television and makes



Yes, but does it work?



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Simpatica in action

extensive use of Amiga Video. Chances are you've already seen some of their work without realising that it was generated by the same piece of hardware that you play Meenage Tutant Hero Burples on. Real Time productions include Star Test and ITV's Chart Show. Keep a sharp lookout for their name at the end of some Channel 4 programmes.

ArtBeat

The people behind Simpatica were at the show. This is an animation controller, facilitating the transfer of IFF animations to video tape at the correct speed.

Anyone familiar with Dpaint knows that the frames-per-second count is a little optimistic at the best of times. This might not be so critical when showing demos and the like on your Amiga but is potentially, financially lethal in the realms of serious animation which is all about timing.

Simpatica works in conjunction with a professional video deck to transfer your animations automatically to video at a smooth 25fps. It provides full timer code support and many other video tools, which you may or may not find useful.

Lustechnik Gmbh.

Amiga owners on the move were delighted when they visited the Graf-Card display. The German Graf-Card uses miniature transistors in each of the primary colours to provide a full colour, 25fps 5cm x 7cm display.

Although hardly state-of-the-art when compared with the current crop of LCD TVs, the Graf-Card is special because it can be fitted internally to an Amiga 500 with the display showing through a specially cut hole on the top. If you want a portable Amiga, this is definitely the way to go about it.

The next generation?

A short Star Trek film displayed on a projection TV drew the crowds at the Commodore stand. Not especially noteworthy perhaps, except for the fact that it was generated entirely on an Amiga.

Requiring 25 days to render, and taking over 60Mb of animation data, the film was proof that the Amiga could produce TV-quality special effects. All 15 minutes were a joy to behold, and put the original Star Trek series effects to shame.

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• AMICUS 17 - Communication packages: COMM v1.33 - XMODEM/WXMODEM, Aterm V7.2, VT-100 V2.6 VTek V2.3.1, Amiga Host V0.9 for CompuServe.
• FFISH 195 - Micro Emacs V3.10 the text editor which is very comprehensive.

UTILITY

• FFISH 366 - PrintStudio V1.2 print any text file in many styles, print part of or a whole picture, screen or window, also control printer and much more.
• FFISH 362 - ArchEdge V1.5 a shell that can be configured for most programs. Already setup for ARC, ZOO, LHARC etc.
• FFISH 327 - MSH handles MSDOS formatted disks exactly the same way as you use files on native AmigaDOS disks. Fully functional, read/write version.
• FFISH 342 - IE V1.0 is an icon editor which can create and modify icons upto 640x200 pixels.
• PDOM 278 - LHARCa V0.99a data compression program hat is 100% compatible with MSDOS LHARCV1.13c.
• PDOM 279 - European Software Agency Utility 1: Amiga Tool V1.5, Boot DIntro V1.0, BootGenerator V1.5, BootLeg V2.1, Character Editor V1.0,Coder Board V4.0, Cosaque V1.1, DCopyII, Deluxe Presed V2.0, BlockV1.3, Font Ripper, Guru Maker V1.0, ISC Amiga v1.5, memory SearcherV1.0, Menu Maker v1.0, No1 Setracker V1.0, Power Utility V2.0, PowerPacker V2.3a, PPMore V1.2, Pseudo Ops. Save IFF, Scanner V2.0,Scroll Maker 2, Seek Destroy V1.0, Seka Source Rescuer, StartupCoder V1.0, Structure HunterV1.0, Time Cruncher V1.1, TVFieldWriter V1.1, Vector Check V1.0, View Boot V1.01, Virus Expert V1.4, Virus Slayer V1.0, Virus Killer V3.10.
• PDOM 280 - The Champions Total Utilies Vol 1: Boot Generator, Boot Girl,Bootmaker, BootWriter, Character Editor, Demo Maker, DiskX v2.2, Flash Ripper, Font Ripper, Guru Maker, Guru Master, Icon Master,Make A Menu, NoiseTracker, Power Packer V2.3b, PPMore, PPShow,Sceneray, Graphics Searcher, SetKey, SlideSHow Maker, Time Set,Tristar Virus KillerTxED.
• TBAG 28 - MachII features: configurable, your help screen, mouse accelerator, PopCLI, Screen Blanker, Mouse OFF, Sun Mouse (activates a window byplacing mouse it), Click To Front (bring window to front by clicking on it), Cycle (move a window or screen to back with left then right mouse button click), Window and Screen Shuffler, CLock, Alarm, Beeper etc. DiskSalv V1.32 is a disk recoverer. NewZap file sector editor.
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• PDOM 62 -The Public Dominator Anti Virus Disk: Virus X V4.1, VCheck V1.2 (for memory), VCheck V1.9 (for disk drives), Zero Virus V1.3the fully integrated virus detector and killer. Also Boot Block Champion the utility and information on boot blocks.
• PDOM 93 -ARP v1.3. The AmigaDOS Replacement Project includes text manual files.
• FFISH 243 - ImageLab V2.2 is an IFF pictures manipulator. NoClick V3.5 stops the disk drive clicking if there is no disk in the drive. PassWord V1.21p you specify the password for your system security. Pcopy V2.0 the excellent disk copier. SimGen adds a 2 or 4 colour picture to your WB screen.
• FFISH 244 - BBChampion V3.1 load, save and analyze boot blocks. BootIntro V1.2 you specify The headline text of upto 44 characters and the scrolling text of upto 300.
• FFISH 279 - MRBackup v3.3d the hard disk backup utility.
• FFISH 300 -TitleGen v1.6 excellent script language that creates scrolling text on screen in any font and upto 500 lines long!
• FFISH 213 - 300 8 colour program icons!
• FFISH 168 & • FFISH 169 - Matt Dillion disk special includes loads of utilities and source: Config V1.0, Clock V1.0, DME V1.31, DMouse V1.1, Backup V2.01, SUPLIB, LIBREF, DRES V1.0, DASM V2.11,FILES V1.2, SHELL V2.1, FINDIT V1.0, LIBS V1.0, SCAT V1.0, ADDCR V1.0, REMCR V1.0 & CMP V1.0You need both disks.
• FAUG 41 - ARC V0.2 compatible with MSDOS ARC V5.0.
• AMICUS 22 - Printer Driver Generator V2.3.
• FFISH 158 - MSDOS V0.1 lists files written in standard MSDOS or ST format, then copies them to RAM then rewrites to disk in AmigaDOS format. DiskX is a sector based disk editor.
• FFISH 290 - XIcon a CLI command scriptor and executor.
• FFISH 258 - DMouse V1.2 is a versatile program that includes screen/mouse blanker, auto window activator, mouse accelerator, popcli, pop window to front, push to back etc.
• FFISH 131 - DFC is a disk copier that multi-tasks.
• APDC 15 - Icon utilities: full of icon files and creators. Some animated!
• APDC 18 - Floppy Disk Utils: Quick Copy V1.0, Disk Mapper, Disk Salvage, Virus check, System Utils: Blitz V1.0 text editor, TimeSet, ACalc calculator Amiga Monitor V1.1, MeM Grab fast memory grabber. Directory Master V1.1.
• FFISH 164 - DiskSalv V1.3 excellent file recoverer and undelete utility. New Zap V3.18 the great file sector editor. Zoo V2.0 the great file archiver.
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MUSIC

• • *AMP11 - 5 disk pack of Sonix files & player for £12.50!*
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DEMO

• PDOM 1 - The Walker I animation of the Star Wars Walker. 1MB.
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• PDOM 27 - Alcatraz Mega Demo II.
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• PDOM 73 - Star Trek the Enterprise leaves dock.
• PDOM 74 - Star Trek craft featured in 4 animations.
• PDOM 76 - Star Trek Shuttle landing on Star Trek craft.
• PDOM 83 - Space Ace demo.
• PDOM 84 & • PDOM 85 - Royal Amiga Force Mega.
• PDOM 86 - MES mega demo 1. 1MB.
• PDOM 87 - MES mega dmeo 2. 1MB.
• AMUSE 8 - The amazing Berserk demo.
• FAUG 33 - The Juggler.
• FAUG 61A & • FAUG 61B - New Tek demo. 1MB.
• FAUG 88 - Dragons Lair.
• FFISH 200 - NotBoingAgain. The scene is a user who puts a disk into an A1000, a Boing Ball demo loads up and the Amiga disk drive opening turns into a mouth and says 'Oh No, not again!' & spits the disk out! 1MB.
• PDOM 32 - Amazing Demos Volume 7.
• PDOM 40 & • PDOM 41 - Northstar Fair Light mega demo III.
• PDOM 42 & • PDOM 43 - DeathStar Blasting II.
• PDOM 44 & • PDOM 45 - The Walker I demo. 2MB.
• PDOM 89 - AMOS the Amiga Games Creator product demo.
• PDOM 104 - Complex BOBs.
• PDOM 105 - D.O.C. No we are not dead!
• PDOM 114 - Slipstream Sineintro 1+2, Equalogo II, Terminator.
• PDOM 146 & • PDOM 147 - Monty Python Nudge Nudge sketch.
• PDOM 148 - Escape from Singes Castle animation.
• PDOM 150 - Scoopex Mental Hangover.
• PDOM 188 - Crypto Burner CD Player.
• PDOM 193 - Red Devil of Dark Star UK Muzak 4.
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• PDOM 236 - Mr Turnip from APEX : Cebit 90, Coma and others.
• PDOM 241 - Anarchy Compact A.
• PDOM 242 - Anarchy Compact B.
• PDOM 246 & • PDOM 247 - Jungle Command Music Invasion3.
• PDOM 250 - North Star Acid Demo 1989.
• PDOM 251 - TSK ACCumulators: Acid House demos!
• PDOM 252 & • PDOM 253 - Death Star Mega Demo.
• PDOM 267 - Jungle Command Non Stop Music Selector.
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LANGUAGE

• PDOM 211 - NORTHC v1.2 Steve Hawtins C compiler. Features compiler, linker, disassembler, examples and tools. An excellent C compiler for the knowledgeable and beginner alike.
• APDC 25 - Logo, XLisp, Modular 2, MVP Forth.
• FFISH 140 - Stoney Brook PROLOG v2.3.2.
• FFISH 141 - Contains the source code for PROLOG FFISH 140.
• FFISH 181 - AM XLISP V2.0 of the XLisp interpretor.
• FFISH 193 - ZC V1.01.
• FFISH 201 -Draco V1.2 the excellent programming language by Chris Gray. Documentation on FFISH 77.
• FFISH 37 - Little Smalltalk.
• FFISH 91 - The Adventure Definition Language (ADL).
• FFISH 337 - CManual V1.0 is a COMPLETE C manual for the Amiga. Includes 70 fully executable examples.
• FFISH 339 - PCQ V1.1c Pascal compiler.
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Fields, files ... ho hum!

One step ahead of the Data Protection Registrar, Stevie Kennedy keeps tabs on his nearest and dearest . . . with Arnor's Prodata

Prodata is Arnor's cousin to the Protext word processor reviewed elsewhere in this issue, and as such, it shares certain of Protext's features. Luckily, it also avoids some of the disadvantages suffered by earlier versions of Protext. In other words, it is as fast as Protext, yet it remains reasonably user-friendly (this is a shortcoming which Protext 5.02 manages to overcome).

Databases in general can be dauntingly hostile beasts, snarling and scowling, and doing everything you tell them with great reluctance. But Prodata, while not exactly kissing your hand, tends at least to flip a quick salute and rush off to carry out your orders.

Yes, yes, that's all very well, but what's the point of a database program when I can easily find any number I want just be flipping through my card index?

If you're still asking questions like this, then you're missing out on the unique and powerful features offered by going 'electronic'. Simple databases are of the 'flat file' variety which means they can't do anything more than act as electronic card indices. Prodata and other more complex programs, however, can do much more, and using them could vastly change the way you use data.

It is very simple to set up a database using Prodata. Unlike some, it will allow you to create a standard layout just by typing in the names of the fields you wish to include, such as 'company name' and 'phone number'. Once you've done this you can start to feed data in until you have created a large database of simple records.

Indexing on a basic level is carried out automatically, and you will be able to sort new files by reference to the first field as soon as they have been input. This means that before you go any further, and within five minutes of picking up the instructions, you can entirely duplicate the functions of a card index, and all of this without the slightest hint of jargonese.

The manual, through several tutorial sections, then guides you in the process of further manipulating the database . It is now that you begin to slap yourself for ever storing data in any other form.

Step one...

The first feature you'll find useful is the ability to define more than one index for the purpose of sorting and searching through your records. With an index defined, you can search for a specific field instead of having to look through all your records. The automatically generated standard index will sort the first data field in alphabetical order, and your database will be ordered accordingly.

However, this can easily be changed to numerical, reverse numerical, date, or reverse date order, and the same on up to four extra indexes.

Now you can search the database for say a salesman whose name you can partly remember and if this brings no joy, change index and search for the company name, invoice number or even phone number.

This is all much faster than the Find option on the main database screen, which becomes quite slow once the number of records goes much above 20.

So far so good. But things start to get really groovy when you make use of the filtering option. This allows you to filter the database so that it will select only those records which meet the filter's conditions.

For example, you could specify that you only want the businesses whose specialist area is pizza making and delivery. The Prodata filter would look something like :

> pizza making and delivery in f11

where f11 is the field containing information on specialist areas. A quick search would then gather together only the required records, making their perusal and sorting a much faster job.

The expression evaluator which defines the variables and conditions used in the filtering can be up to 70 characters in length, resulting in some very selective filters indeed.

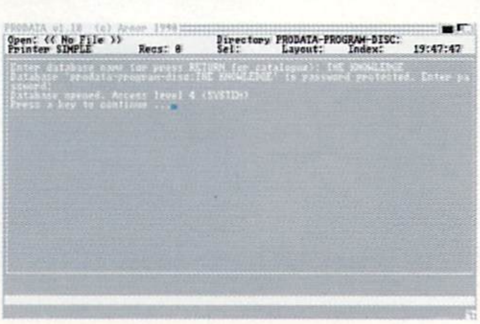
Filters such as:

> find all pizza companies who make and deliver ten inch with extra mushrooms for less than £10

are not beyond the bounds of possibility. Once the filter has selected the desired records, you can treat them like a sub-database or switch back to the remainder of the records at will.

In this way, the filter can act, for example, as a selective trashcan. Just gather together all the undesired records and delete them, the electronic equivalent of "round 'em up, put 'em in a field, and bomb 'em!"

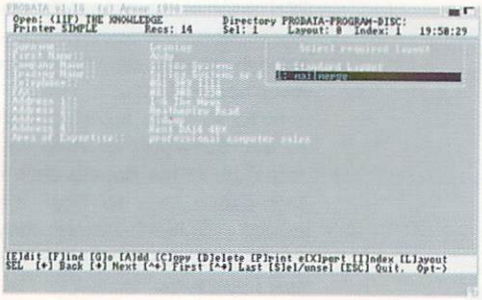
Sorting, indexing and filtering your data is useful, but to receive the full benefits of a computerised database you must be able to print out the now readily available information in a fashion as flexible



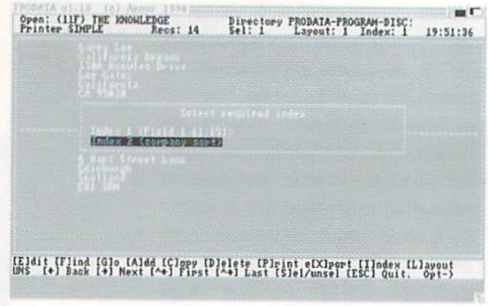
You need the password before opening a database



Fil2: Filter out those pizza-parlours!



The standard layout can soon be altered....



...to the mailmerge layout

as you can sort it, and this is where Prodata's idiot-proof layout system comes into its own.

Using either the cursor keys, or by pointing and clicking with the mouse, you can arrange up to 99 extra layouts using some or all of your data fields in any order you please. Page length, record length, and the number of records on each page can be set in a list of the layout's attributes, and a number of different variables, text, or page layout attributes can be given to each field chosen for the new layout.

This means you can choose literally any layout your heart desires to display the data (within limits – Prodata doesn't yet support 3D graphics!).

We defined a new layout called 'mailmerge' and, with a couple of keystrokes, rearranged our entire database as a mailing list ready to be output as address labels.

By including only the fields we needed and leaving out phone numbers and such like, we managed to put together a rather tidy little layout which would keep lines together even if one was missing. It would also tack the first and surnames together in the correct order, rather than sending mailshots out to Bloggs Joseph and Smith John.

Any beginner would be able to do likewise in a very short time, as the manual supplied with the package is designed with those people in mind.

Having got this far, you're now using Prodata in a productive fashion, if not fully stretching its capabilities. If you want to take things further, you can expand the use of the expression evaluator so that your stock list keeps a running total of the VAT payable on the items you hold or, if you keep a list of employees, the total company payroll (both of which would be updated automatically as new entries are made).

With this support for variables and their free use within any record, Prodata allows your database to carry out a range of functions that paper-bound systems could never equal, and adds a potentially very powerful tool for evaluating your data.

Bring out the big guns!

This is by no means a spreadsheet or anything of the kind, but imagine that you are a club chairman, and you want to evaluate the effect on your club's finances of putting £5 on the membership fee.

If you allow that you might lose x amount of members, it is a simple task to have Prodata calculate your new income from subscriptions and display it in the epilogue at the end of the database.

Add to this the supplementary features, such as the ability to define up to 128 macros, and give your database five separate levels of password protection with a different password for each level, and you've got a surprisingly fully-featured package for less than a ton.

OK, I've pumped this thing till its eyes are popping, and you might be thinking 'what's the down side? Well, the first thing you notice when you start building bigger databases is that the speed of searches becomes a little slow.

Even with clearly defined indexes, you can sit looking at the screen for painful periods while Prodata crunches through the records looking for the ultimate pizza parlour.

This is not a serious flaw however, as the deft application of filters will bring your search area down to more manageable proportions quite quickly.

What is a little more unsettling is the program's inability to graphically represent its data. It will happily import and export text in ASCII format, and the layout definition process allows for simple boxes to be drawn around fields and so forth,. But the inclusion of even a little more 'whizz' on the graphics front would have made a lot of difference.

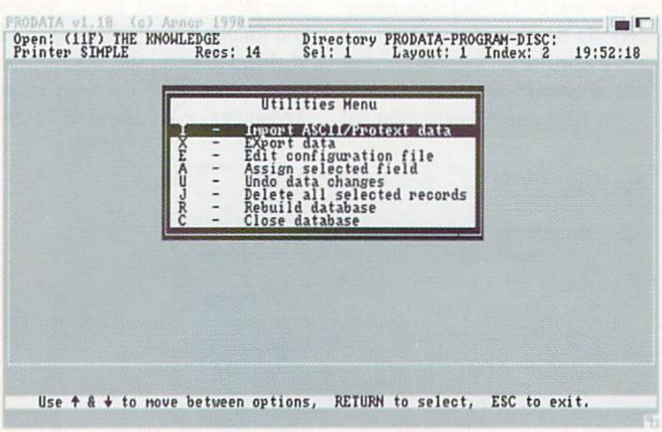
It seems we're destined to use databases which remain deeply rooted in their green-screen ancestors, presenting wodges of text quickly and effectively but just a tiny bit boringly.

The traditional businessman won't mind this in the least, but these days, your average computer user is demanding that information be presented in a way that takes full advantage of a machine's capabilities. Prodata falls an appreciable distance short of this, in the Amiga's case at least.

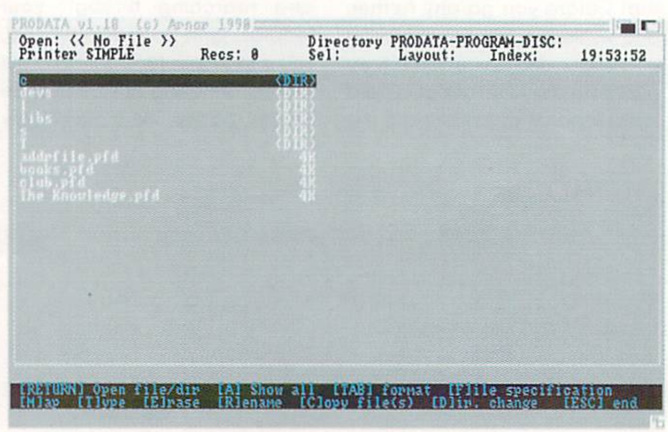
The Arnor family is steadily gaining recognition as one of the best Amiga choices for the small businessman or self-employed person, and Prodata is as good a choice in its field as Protext is in the word processing game. And with a few reservations concerning presentation, I would recommend them without hesitation.

If, as Arnor claims, Prodata is to be given the Protext 5 treatment and provided with to pull-down menus and the like, then so much to the good, But I can't help thinking that if the competition starts to match Arnor's price-to-performance ratio with packages which are more pleasant to use and capable of presenting data in a way which someone other than the package user can appreciate, then Prodata might start to look a bit dated.

Prodata
Publisher: Arnor Ltd
Telephone: 0733 68909
Price: £79.95



Import/Export of data is relatively painless



The disk management screen is identical to Protext's

Dear Santa...

Here it is, the definitive letter to the old guy with the beard and red suit. Get your message to Santa, without having to sit on a pensioner's lap...

It's that time of year again. Retailers are cutting each others' prices (and throats) to grab the biggest slice of the market, salesmen are fighting feverishly to boost their bonuses, and advertisers are launching savage assaults on our ears, eyes, and financial libidos in an attempt to lure us into even more debt with our not-so-flexible-when-we-owe-them-money friends. Oh, and there's also the small matter of some bloke being born in a barn, but how they're going to market that I've no idea. Yes – it's Christmas!

We at *Amiga Computing* realise what a strain all this Noël stuff can be on both body and soul, and so we've taken the revolutionary step of offering our readers a guide to Christmas shopping for the Amiga nut who has everything. Within these pages you will find indispensible advice on all the best and the most gloriously naff pressies you can buy for That Boring Relative Who Never Stops Talking About His/Her Hard Drive (ahem).

£0 - £50
The Cheapie Zone

The first and most obvious purchase is a copy of *Amiga Computing* (£2.95 from a newsagent near you today!) which you can roll into a neat tube and wrap up to give the appearance of a bottle of Glenfiddich. This leaves £47.05 (or £32.68 in Irish money) to spend on graphics, music, and other applications and, if you stretch it, the odd add-on (and some of them are decidedly odd!).

"How do I make fifty quid go so far?" I hear you scream. Easy, just pop it in a jiffy bag and post it to me from a distance of a hundred miles or so. Seriously, though, there are plenty of useful items you could buy in this price bracket. For example, music.

Do you know anyone who's into music and has an Amiga? Did you know that any one of a number of essential music-type thingies can be yours for fifty notes or less? Mastersound for instance, does a budget sampler you can pick up for £32.95, MIDI interfaces can be as little as £19.95, and Music X Junior, Aegis Sonix, and Dr T's MIDI Studio all come in (individually) under the pony barrier.

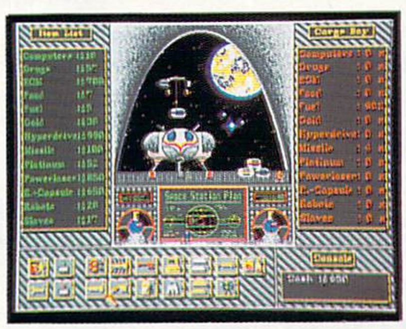
Add to this the number of SoundTracker clones, such as the excellent MED from last month's cover disk, and zillions of disks' worth of samples, tunes and effects disks to be had from PD libraries and it's clear that you'd have to be a few bars short of a symphony to miss out on affordable Amiga music.

Graphics Again, the pixel-power available in the sub-£50 area, leaves no excuse for those boring pressies you were about to buy. I've no sympathy for anyone who is evicted from the family fold after buying a home accounts package for Dad at Christmas.

There are, for example, margin-cutting maniacs who will sell you Pagesetter II for £49.95, and I'd advise a hasty response to the offer before they're certified.

All the older paint packages, such as Dpaint II, Photon Paint, and Spritz Paint are lurking in corners of the classifieds at prices you'd have considered shocking this time last year. None of these is outdated in the least – they've simply been superseded by newer versions and continue to be perfectly viable pieces of software in their own right.


Photon Paint


Return to Earth


Startrek


The Walker II

Upgrades

If you know someone lucky enough to have the Vidi-Amiga package but not the colour upgrade, you could supply this useful little beast for a mere £15.95 and banish Rudolph The Dark-Grey-Nosed Reindeer for ever.

Come on now, do I have to draw you a picture? Get out there and upgrade your sense data!

Speaking of upgrades, these have been steadily creeping into

the Cheapie Zone for the last year or so. It's not so long ago that Commodore were charging £150 for the official RAM expansion cartridge, and with a straight face into the bargain. Now you can upgrade to a full megabyte of raunchy RAM complete with battery backed-up clock for less than a third the price.

External floppies are also sinking fast, as third-party peripherals manufacturers engage in outright commercial warfare over the pound in your pocket so that these days, you can expect to spend no more than £50 for your second drive.

Either of these essential upgrades is guaranteed to transform your A500, and they are easily the two best buys for any standard A500 owner. They also have the advantage of being the two most readily available pieces of extra kit in the High Street.

Most dealers, and I don't include certain washing machine and Hi-Fi retailers masquerading as computer dealers, will stock these items all year round but if you want the best bargains, look in our ads.

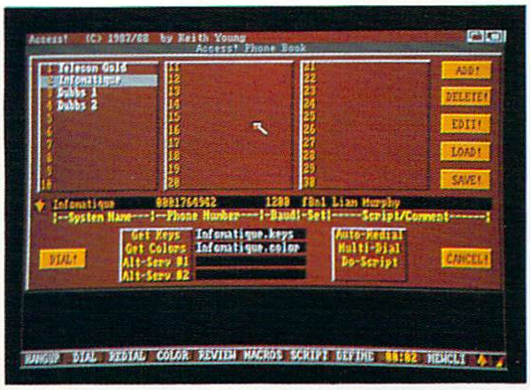
Stocking Fillers

If you're thinking 'fine, but s/he has already got everything from a mouse holder to a laser printer', then don't despair. It is a fact of computerised life for example, that no-one buys decent disk boxes except the sort of people who arrange their toothbrushes in alphabetical order.

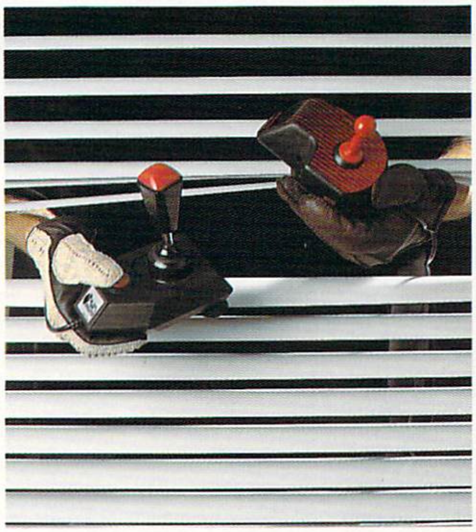
Everyone else is too stingy to part with 10 or 20 quid for a lockable disk box when a much cheaper storage space can be utilised, which is why all my disks are missing. It follows that a disk box will suffice if your budget and/or imagination completely desert you.

It would be doubly welcome, of course, if full of blank disks. These elusive creatures hardly ever grace my desktop, and most people buy them ten at a time (some have been known to buy them singly, but they prefer not to admit it – they know who they are).

If you want to splash out a bit more, go for a printer stand which will normally be less than £15. No-one actually owns one of these things and I have never seen one in the flesh. They are useful for elevating your printer above the work

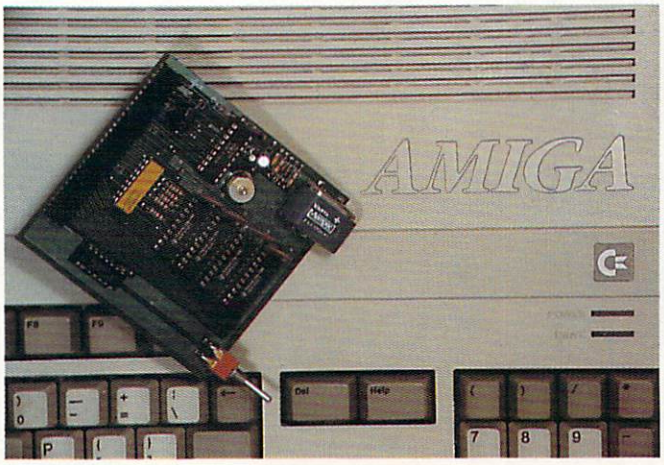


PD music


Joysticks



PD comms



Virtually a necessity these days

surface so that it is easier to lose things under it. A bit more cash will get you a replacement mouse or a tracker ball for between £20 and £45 and, as the internals of most original mice gradually become large indeterminate balls of fuzz and strange water-proof hairs (!), a nice shiny new one is usually very welcome.

£50 to £150: The Erogenous Zone

How about a "fatter Agnus" for Christmas? No it's not some sort of new creation from Bernard Matthews, it's a splendid piece of silicon which can give your trusty old Amiga a whopping one meg of chip RAM, ideal for any RAM-hungry package such as ray tracing utilities.

For anyone who doesn't yet know, chip RAM differs from fast RAM in that it is the only memory portion which the Amiga's custom chips can access directly, and this is limited to only half a meg with the older Agnus chips (skinny Agnus?).

Do you want to capture the Christmas spirit forever? If so, Vidi-Amiga could be your answer to the Christmas shopping blues.

"Sounds great, what is it?" I hear you cry. Well, it's a reasonably inexpensive video digitiser, retailing at around £80 to £90 depending on the version you require. The end result of spending your cash will be a 16 shade mono screen grab of any domestic video image provided by any VCR with composite video output (that's the output with 'CVBS' written under it at the back of the VCR).

The grabs are all in IFF format and thus can be loaded into, for example, DPaint and completely ruined, er, I mean edited. If you are feeling particularly generous you could also invest in the colour software upgrade (as mentioned in The Cheapie Zone), which uses red, green or blue filters (supplied) with a mono video camera, or takes still colour source if used with an RGB splitter.

Continuing in the video screen grabbing direction, we have the next crimbo classic – or the Rombo RGB splitter. It will take a still colour video signal and extracts red, green and blue for use with Vidichrome or Digiview. This little item will set you back

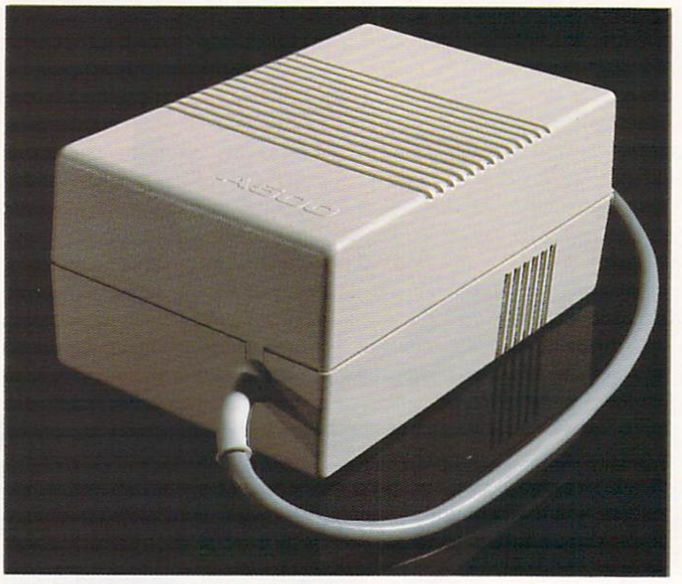
around £60.

The AMAS sampler and midi interface is the biz here. If you're in the market for a super sexy sampler in your stocking, but you don't want to burn a huge hole in same, AMAS is great. OK, it's not exactly cheap at around £75 but it does give great results.

With its many features and options it can produce excellent quality sounds which can be saved in a standard IFF format. Obviously these can then be reloaded and further manipulated, or perhaps used with other music packages.

Music X version 1.1 is one of the most powerful sequencing packages available on the Amiga, and a must for anyone wishing to produce professional standard music via their Amiga.

At approximately £60 it may seem rather expensive when compared to PD music packages, but when some of the features are taken into account it is, to be honest, cheap.


Too many add-ons and you'll need a beefier power supply

Upgrades

If you are not already the proud owner of lots of MIDI equipment, however, it may be worth looking for something cheaper for the time being (again, all you scrooges are directed to The Cheapie Zone).

If you don't mind splashing out a bit, there are lots of goodies to be stuck onto your Amiga for £150 or less. You can, for example, elevate your beloved Amy to the dizzy heights of 1.5 Meg for only £89.95 if you read our ads carefully enough, and an ADRAM board, populated to 1MB and capable of being gradually upgraded to a chillingly desirable 6MB can be had for £139.

With one of these babies installed, you need never worry about memory requirements again. Storage-wise, you're still stuck with floppies, as no-one, despite my begging letters, can presently supply hard drives for less than about £300 (alright then £299).

However, if you want the best in floppies, you could have dual 3.5 inch drives with their own power supply for £110. Alternatively, if you're silly enough to want an Amiga to talk (down its nose...) to a PC, you might look at external 5.25 inch drives, most of which are a bit more expensive than their 3.5 inch cousins at £100 or thereabouts.

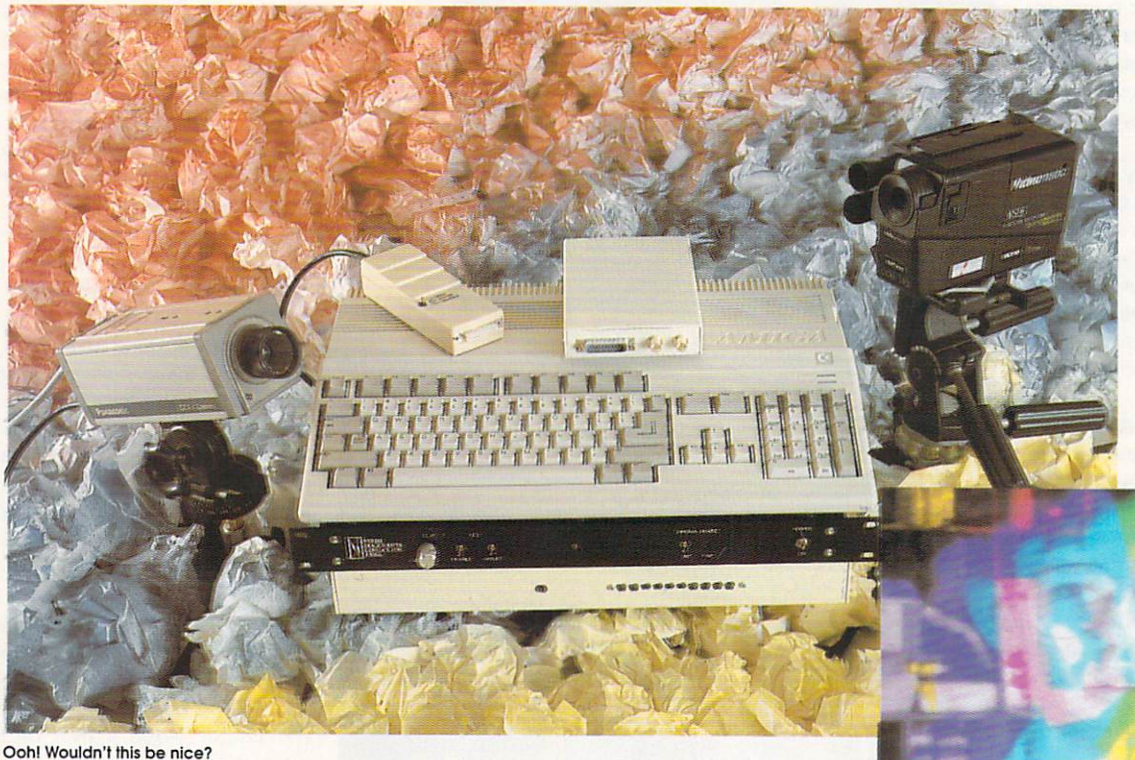
In the £100-£150 bracket, there are now dozens of decent quality 9-pin printers to be picked up, although if you don't pay for them first you may find yourself on a shoplifting charge (don't say we didn't warn you!).

Star and Citizen printers are the most commonly discounted models, but Panasonic, Mannesman, Olivetti and others can also be found heavily price-chopped for Christmas and all of them give acceptable quality print output.

At the check-out

Well, there you have it, the definitive guide to spending between £50 and £150 on Amiga software and accessories without ever having to leave your seat.

All of the items mentioned can be found in our ads, so just relax, pick up the phone, think of setting fire to a wad of fivers, and start chanting out your credit card number.



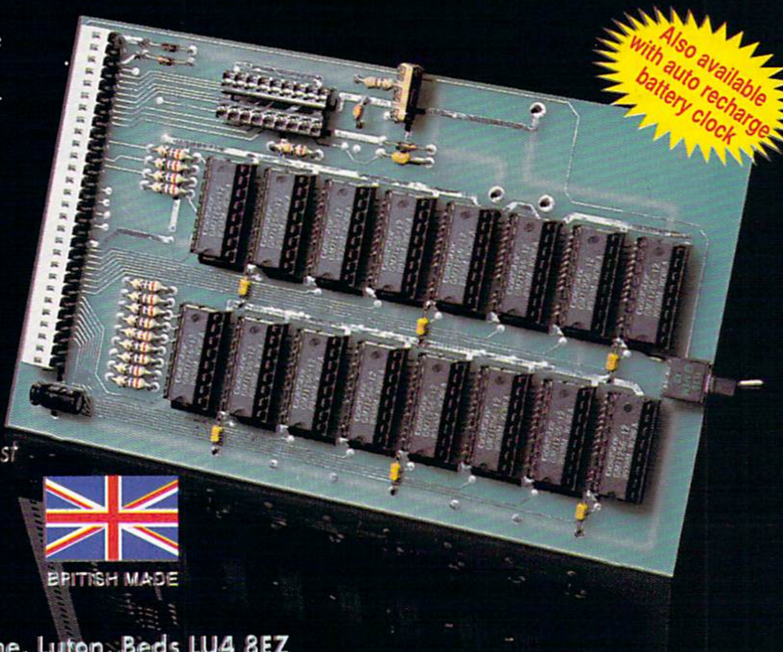
Ooh! Wouldn't this be nice?


Vidi

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TFMX	£44.95	£39.50

Protext V5

Paul Austin dons the hack's traditional garb of trench coat and trilby to take a new look at an old friend...

A late night had turned into an early morning, and the cold light of day shone through the smoke filled office window. "The copy's late" said the new temp as he dropped the mail onto Sam Spillane's desk. "Tell me something I don't know, "

Sam grunted. A blank page and an overdue deadline were all he had to show for a night's work. There was nothing to look forward to but a whisky breakfast and another smoke.

This man needed help, and as he thumbed through the mail it appeared: Protext V5. The story continues, the culmination of Protext's five year mission to save the written word. Could it save Sam, could it save you, (will we make it to a review? - Ed) we shall see...

Those familiar with Protext in its many forms will no doubt find me wandering over old ground, but hang in there, because even the old hacks may be in for some surprises with this, the latest version.

All versions are compatible, so experienced Protext users shouldn't be in for any unpleasant surprises. All the keyboard short-cuts are still here, making production as fast as ever and even with the new features, the program seems to run as smoothly as its predecessors (touch typists shouldn't find themselves blasting away on the keys leaving the processor struggling to keep up...).

With this in mind, it may be worth while for owners of earlier versions to upgrade to Protext V5. All you would-be writers out there will no doubt want a run down of the features available on Protext – a daunting prospect. The best way to do this is to flick through the advertiser's index and find this month's Arnor advertisement. This should provide all the information required.

It may seem something of a cheat, but it means I can devote more detail to the features, and the various advantages and indeed, disadvantages of Protext.

One of the main drawbacks of the old Protext was the rather rigid operating system, which in certain circumstances required the use of the command line section of the program.

All the beginners out there are probably thinking,"God, he means CLI". In the past, that may have been the case, but no more! Protext V5 has a full complement of pull-down windows and dialogue boxes which in version 5 cover all the options available. My personal favourite is the help window which, in these days of software house paranoia concerning their products, is refreshingly detailed, and indeed useful.

Most options can be activated by keyboard short cuts so there's no need for the hacks among you to reach for a rodent.

The Amiga version of Protext still doesn't support graphics other than simple IBM boxes. To be fair, the program has never been aimed at the DTP market. Those of you wishing to dabble in that area may do well to look elsewhere, possibly ProWrite or Pen Pal. If however, you need pure power and speed, Protext is difficult to beat. Arnor's little gem is aimed directly at the professional user rather than someone who needs pretty pictures.

If you're writing a lot of text regularly or perhaps require options such as mail-merging or multiple file handling, Protext is great. The new version provides block marking which is simply a matter of dragging the mouse from A to B.

Auto-formatting

When it comes to the handling of pure text, it's very difficult to think of a problem which Protext can't handle. In short, a small business would find it ideal, possibly used in conjunction with Prodata the Protext-compatible Database.

Automatic page numbering, multiple line headers and footers with odd and even printing are an author's dream, making the production of a book manuscript with a really professional look a simple 'task apart from writing it of course'. A new timed save feature auto-saves files, reducing the chances of any unforeseen disasters.

With business in mind, it's worth mentioning Protext's contribution to 1992 and the opening up of Eastern Europe. To accommodate this corking event, Arnor has incorporated 27 different languages plus 10 different keyboard layouts and 13 separate accents can be allocated to any character. A German dictionary is already available, with others to follow.

Improved printer options, multi-proportional fonts, mixing different font sizes on the same line, formatting while editing, side margins, centre tabs and a massive range of printer drivers – am I getting through to you? Protext is positively dripping with features.

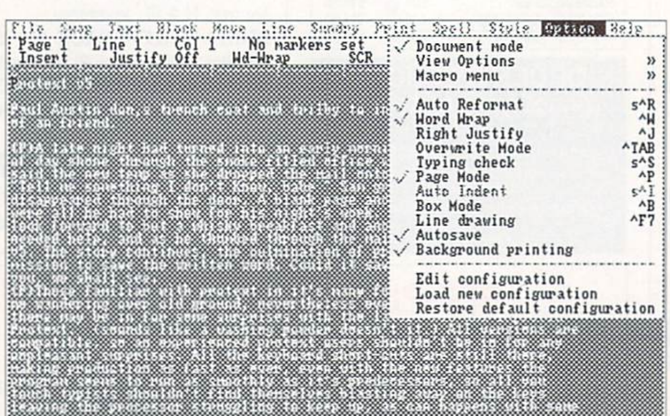
But wait, there's more-: Multiple file handling, up to 36 files open at one time, split screen editing and variable window sizes while editing documents. The split screen option makes exchanging blocks of text between files simple.

Index and contents generation is a breeze. The indexer takes marked words or phrases and wraps them in printer control codes enabling them to be reproduced in various styles. There's also a new and considerably larger Collins dictionary (110,000 words+).

Perhaps one of the greatest improvements however, comes in the form of a very fast phonetic look-up, which is very impressive. The previous version's pattern recognition was dreadful. In version V5 it's splendid. If, like myself, spelling is not your strong point, the spell checker is a god-send.

There are many subtle additions which generally enhance the package including adding a row, or column of figures, find word at cursor, 40 column mode support, inter-paragraph spacing, news-paper style column printing and probably some others I've missed.

Protext V5 is in fact three programs in one, Protext itself, Config, and Fsort. Both Config and Fsort can be loaded while in Protext and with Config, it's

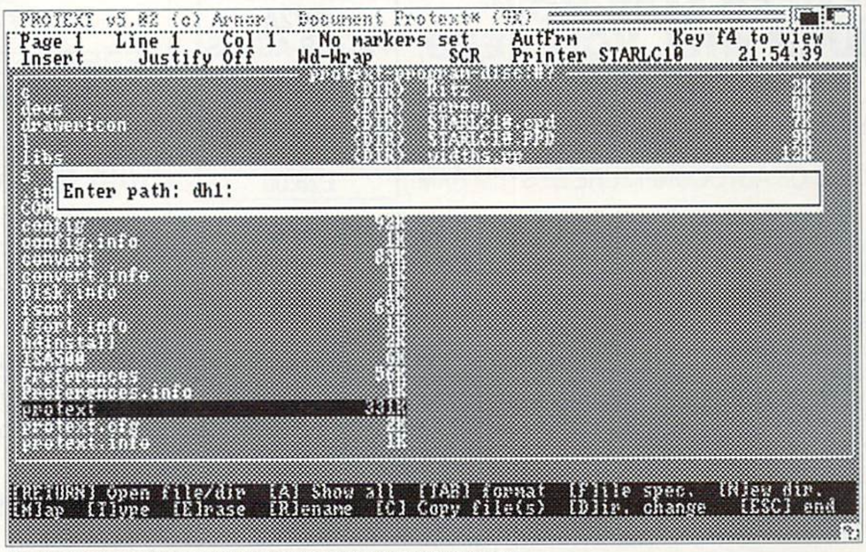


The new improved printer options take some of the pain out of printing

possible to set all the parameters relevant to the program. Using Config, separate configurations can be saved and loaded, making it possible to load specific document styles direct from disk. No more setting tabs and margins, just load in the required configuration and it's all done for you.

Fsort is a file sorting utility with special options for names and addresses. A revised manual and tutorial have been produced to accompany the new version and both make use of the program very straight forward.

One drawback with Protext is that at least 1Mb is required to use it. An extra drive is also a good idea. With Protext retailing at approximately £150, it may seem a little expensive to a beginner, but it's worth remembering that it's unlikely you will ever need to upgrade.

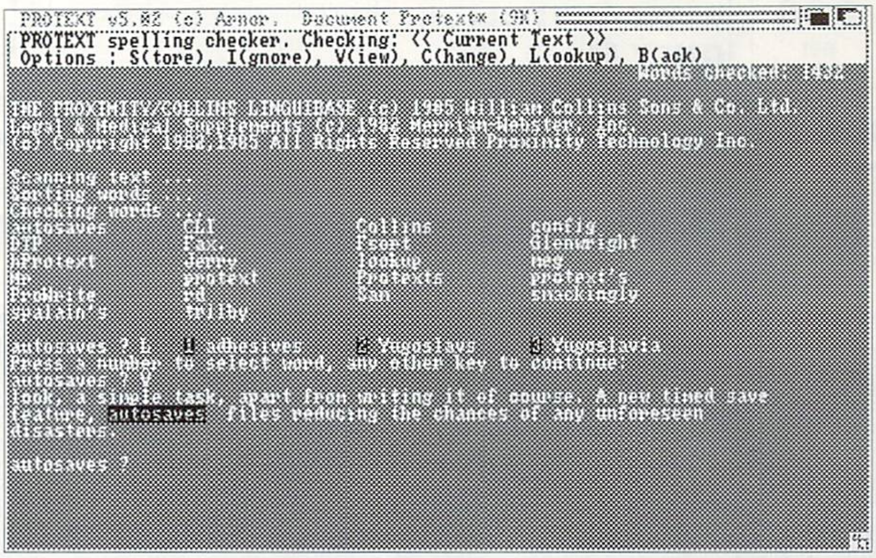


The file requester supplies you with all the options at a single stroke

And in the red corner...

Those looking for comparisons could take a peek at Word Perfect by Sentinel. The program's a firm favourite on the PC, and in the business community in general. It also runs in 512K and features a thesaurus.

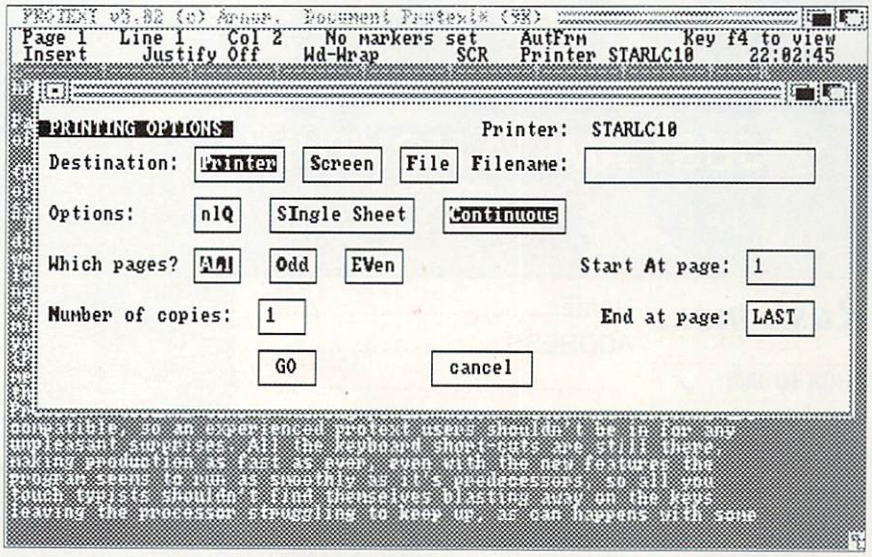
Excellence is the second alternative in the serious user market, and is possibly Protext's biggest rival. It really is the ultimate system with full DTP support, fast spell check and thesaurus and even a grammar checker. If you're a professional journalist who needs all these features, this could be it, but the program isn't cheap.



Pull down menus bigger and better than ever

If you're a beginner or perhaps an occasional writer, it may be worth while looking at the cheaper end of the market. If, however, you need speed, power and lots of options when handling text, Protext is unbeatable and a firm favourite with many an old hack.

Read the Arnor advertising, and you'll no doubt come across the usual extravagant quotes, such as: "I would rather drink a pint of ear wax than use another word processor" – Mr Fictitious. The truth is if you need a professional word processor to handle large amounts of text for what ever reason, Protext is perfect.



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NEWS

● Freely Redistributable C Update
Two completely new C compilers landed on my desk, along with two new versions of NorthC. All of these compilers have the potential for producing good code at low cost.

Let's start with NorthC. Version 1.0 did not impress me one bit. It was slow, lumpy, and unreliable. This must have been the symptoms of 'Version 1.0 Syndrome' (an affliction of first release software, which passes after V1.01) because V1.1 is quite neat.

But that's history now, because V1.2 is neater still. NorthC is essentially a port of Sozobon's C for the Atari ST. Steve Hawtin and a few others have been busily fixing bugs and implementing new features. It now has good, fast console I/O, and produces fast, if rather large, executables.

Amiganuts now handles the distribution, and Ray has put it on two disks, with none of the mammoth archiving to be found in the Fish collection. It's also Charityware, Steve wants you to send £15 to a national spastics society.

● For those of you who dig archives in a big way, Fish Disk 351 has three of them. They contain PDC V3.33, the 'Publicly Distributable C' compiler. This has very tenuous links with the ancient curiosity known as PDC, as it has some very advanced features indeed.

Notable support is for most of the features of ANSI C. This variant of the language is touted as the ultimate portable compiler, and a solution to the old problem of compatibility between machines. It also supports precompiled header files, speeding up the software development cycle no end.

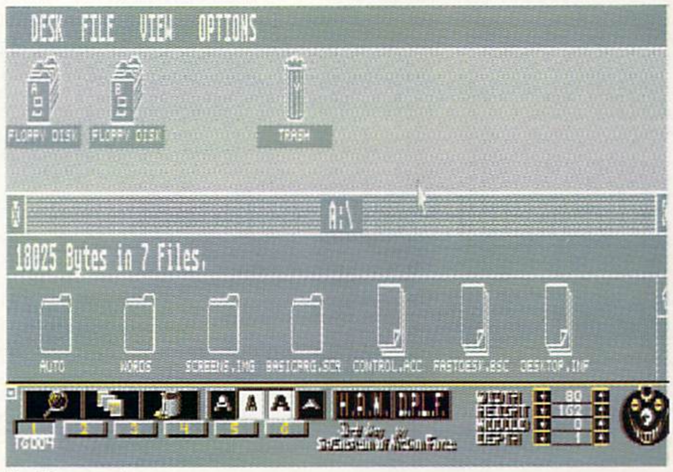
The authors of PDC, Lionel Hummel and Paul Petersen, have done a lot of good work here, and ask for a paltry $10 appreciation. You'll still need the Commodore Amiga Include files (as you will with NorthC) but it's an extremely neat system.

● Right. I can now reveal the glad tidings. $40 (plus a bit more for overseas postage) will buy you the registration to Matthew Dillon's latest and greatest venture. It's called DICE - Dillon's Integrated C Environment.

Matthew's a fully paid up developer, which allows him to include the Commodore Library and Include files with his new compiler system. That means if you register you get absolutely everything you need, software-wise, to write proper C programs on the Amiga. I knew you'd be impressed.

The system is built for speed, as everything can be made resident if you have the memory. The editor, DME, is fast, efficient, and what I use for everyday writing. DCC, the compiler front-end, controls the rest of the package. First it calls the DCpp preprocessor to sort out macros. Most of the work is done by DC1, the compiler, which does huge scale optimisations for both speed and code size, and outputs assembly language source to the tiny assembler Das. The last link is Dlink, which glues together the libraries and object files into an executable image.

In its initial release form on Fish Disk 359, DICE had no support for floating point, and had little in the way of ANSI features. Via the wonders of MicroLink's Internet service, I heard from Matthew that floating point and 68020/030/881/882 are now supported, most bugs have been crushed, and that more ANSI features have been implemented. This will be the last distribution to the public.



3rd Day grab

3rd Day Graphics Ripper

How many times have you seen some graphics and lusted after them? Fine, with Workbench running and a few simple tools, you can have an IFF image within seconds. But what happens if the graphics were from a game, or something else that doesn't use AmigaDos? You'd be stuck – if Intuition doesn't know about a screen, then you can't save it.

But consider this – there's at least half a megabyte of chip RAM on every Amiga, and the chances are that it won't get cleared out every time the machine is reset. So, somewhere deep in the heart of the chipmem, lurk the graphics you desire.

The 3rd Day Graphics Ripper (catchy name, huh?) allows you to wander through this memory, looking at interesting bits. There's nothing new about this, but 3rd Day is clever. It knows what to look for – if there's a valid Copper List, it will be interpreted as such.

Every screen that appears on your Amiga has a Copper List. This is a program for the graphics co-processor which tells it exactly how to display a screen. So if you can find this 'program' you're most of the way to finding the whole screen.

Usually, finding a possible Copper List results in a random mess of harmless pixels. Sometimes you get exactly the screen you're looking for. 3rd Day is extremely powerful, it found the screen of an ST Emulator I'd been playing with first time.

The colours might be a bit off, but there's a helpful option to search for colour data. Colours aren't that important, because



NorthC – see News

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you can always restore them with a paint package.

If you're unlucky, 3rd Day won't be able to build the screen automatically. Manual mode requires a little technical knowledge and a lot of patience. Bitplanes have to be found singly, and then stuck together in the right order – tedious!

For a program that works outside the constraints of Intuition (that means it's a hack), 3rd Day has good documentation. It takes the form of a scrolling demo with a SoundTracker tune. It may have the odd rude word in it, but it's fairly helpful and very original. Find it on UGA Utilities Disk 9.

CRobots

I've been playing with far too many C compilers this month. Usually this has to be remedied by a few rounds of something simple and stupid like Amoeba Invaders, but this time I'm fighting C with C.

CRobots is a game of fighting C programs. The game doesn't involve bashing two structs together to see which cracks first, but rather pitting robots against one another to see which one survives the longest.

How long your robot survives depends on how good a program you wrote to control it.

Unlike most games, the strategy of CRobots is played out before the final contest, which involves dumping the robots in the playing grid and leaving them to it.

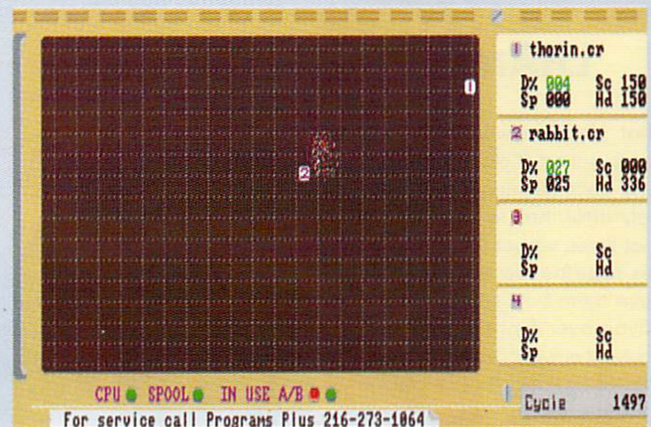
First, write your C program. The compiler supports integer mathematics, and has only the most basic functions built in.

As it's really an interpreter, it won't crash the machine if you run a faulty program. In that respect, CRobots may just teach you the basics of C. There are seven functions available to move your robot, fire its cannon, scan for enemies, check damage and locate itself

For faster operation, robots can be precompiled, and saved as executable programs for the CRobots Virtual Interpreter, which runs at 0.000309 mips! These programs won't run on your Amiga without CRobots. Pre-compilation makes for quick games, and stops opponents peeking at your code.

CRobots will probably appeal most to programmers (especially those who think they can write the 'best' programs), computer game enthusiasts, people wishing to learn the C language, and those who are interested in compiler design and virtual computer interpreters.

The program is also lots of fun for those of you who just want to see two robots knock the living daylights out of one another. CRobots V2.3w is on Fish Disk 345.



Robotic mayhem in the form of C-encoded metal funsters

The Amiga Coders' Club

There's a lot of people trying to learn how to program in assembly language out there. It's not difficult – after all, if a small inanimate bit of plastic can understand it, anyone who knows A from E on a keyboard should be able to comprehend it too.

The difficult bit about assembly language is getting the right attitude. And there's no better way of doing this than just messing about with some source code, seeing what happens if you change something, and then wondering why it bombed out. Or pondering quite what the subroutine called by 'JSR Format_HardDisk' does.

Getting source code is quite difficult. There's usually some on our coverdisks, but there's little to beat wandering about the entire source of a demo to see how it works. But where does this code come from?

The Amiga Coders' Club (ACC) aims to provide that service. Several of its contributors are well known demo writers, who have supplied commented source code for the benefit of humankind.

It's pretty much a club rule that all source code has to be DevPac2 compatible, which is a greatidea since it's about the friendliest development system you can get. Most of the code is demo orientated, but occasionally you'll find a bit that works with the operating system intact.

Utility routines like SoundTracker players are also available, but as these are specifically built for speed, they're not built to be understood. However, I see just one tiny problem with ACC. Anders Bjerin has been running the Amiga C Club (also ACC) for quite some time now. The two clubs will get confused, even though they're very different.

ACC disks are produced periodically, and distribution is now handled by Ray Burt-Frost of Amiganuts UK. Amiganuts disk ACC1 contains a selection of old ACC articles, and makes good browsing.– well worth a look. Anyway, it's $4E75 for now...

Mathemusical AlgoRhythms

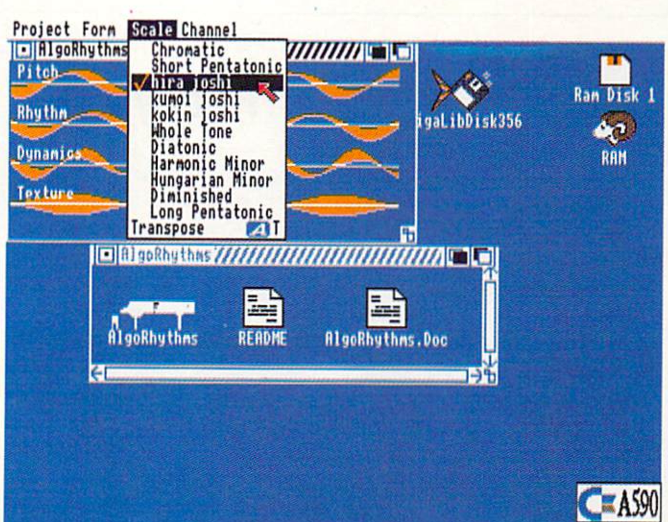
Everyone knows that the Amiga is the best music tool in the business. Until now though, only a few people have actually used them to write music. So, say the smug types, exactly what are all those people with Music-X doing? They're only using the computer to get a tune out of their heads and into the air.

AlgoRhythms uses the Amiga to write music itself. Algorithmic composition has been around for many years now, usually beyond the realm of popular appreciation. Professional music packages sometimes use composition algorithms to develop melodic fragments as an aid to improvisation.

In AlgoRhythms, the computer chooses the pitches, durations, and dynamics played to a MIDI channel. The shape of the composition is determined by the user – how the pitches, durations, and dynamics slowly change with time while the music plays.

AlgoRhythms plays music in real time while it makes choices of pitches, durations, and dynamics, and can run virtually indefinitely. The music created is different to anything you've ever heard, yet often manages to be pleasant despite its curious form.

The author of AlgoRhythms, Thomas E. Janzen, has been composing using algorithmic methods for many years. Originally, this meant transposing lists of numbers by hand from a batch-job printout, but with the wonders of MIDI the



Algorhythms – feed in some good vibes and away you go

process has been automated.

The program is presented as an introduction to algorithmic composition, and includes excellent documentation. You should have guessed by now that you need MIDI equipment to use AlgoRhythms. You can have up to 16 channels outputting at once for mellow soundwash experiences, right down to a single channel for startling minimalism. Look on Fish Disk 356 for AlgoRhythms. It can be beautiful.

HyperHelp

Don't you just love loose-leaf manuals? Flip to the back to find something in the index, flip to the subject, find something you don't understand, flip to the glossary (near the back) then flip forward to the subject again. And if your manuals are anything like mine, the little metal hoops in the binder never quite join, so turning pages at all is a major exercise in getting angry.

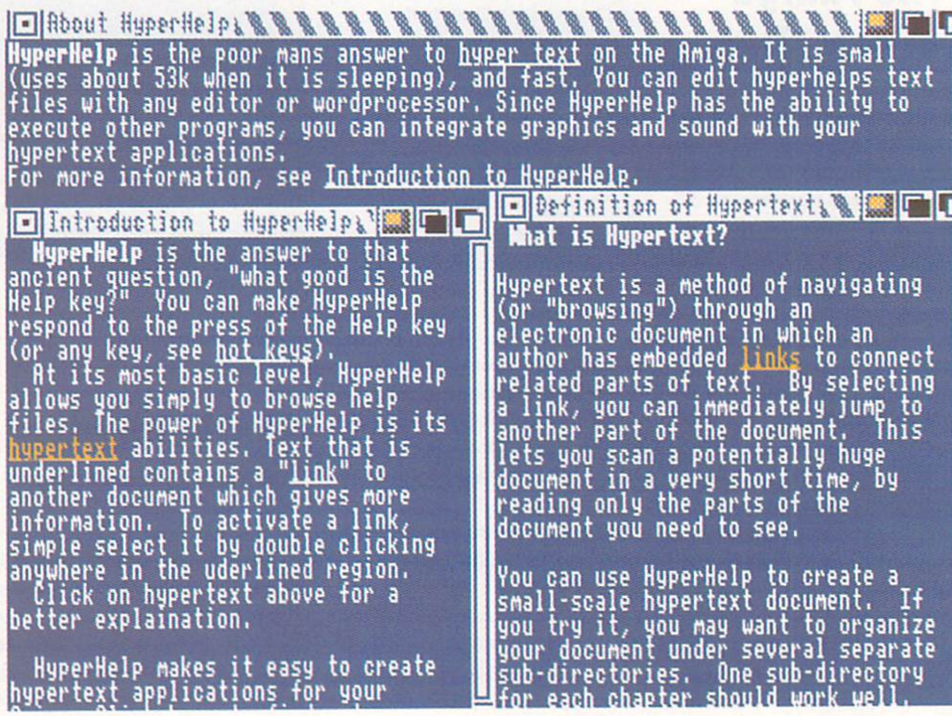
The other thing about manuals is that when you need them, they've emigrated to Siberia. But as soon as you don't need them, they create a teetering pile which looks almost strong enough to support another of their kind. Of course, you soon find out it wasn't when you try...

Hyperhelp can help. It's a small program designed for the presentation of information in a straightforward manner that anyone can understand. You browse through the text, and key words are highlighted. Double click on the word, and it takes you to another window of information. Once you've found what you were looking for, you can close up the program, and it waits in memory for the next time you hit Alt-Help.

Creation of hypertext documents to use with Hyperhelp is straightforward, as they can be created with a text editor no more complex than Ed. The only complexity is that you will have to work out the structure of the documents yourself – Hyperhelp only navigates through linked files, it cannot create them.

Hyperhelp an interesting program, and could be useful to some people. It's very conservative of memory, using only the bare minimum of resources – partly due to its development on a single drive half-megabyte A1000.

Hyperhelp is hidden away in the Utilities drawer of TBAG Disk of the Month #38. Joe Porkka, the author, may develop it further if he gets enough of a financial incentive.



Hypertext grab

LHArcA

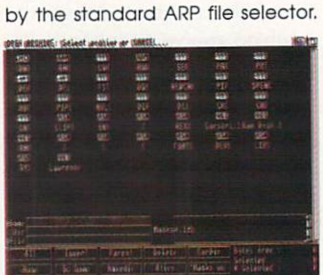
What happens when your disks start to get full of old files that suddenly become important immediately after they're deleted? Or what if you've got to keep some files together so that you can move them between machines, maybe over a phone line? You archive them, of course!

LHArc by Paolo Zibetti is currently the archiver of choice for the Amiga community. Although it's slow to create an archive, compression is the best in the business, and de-archiving is fairly rapid. Some of the space savings are remarkable. PostScript bitmaps (for DTP) often shrink to one twentieth of their former size. Text files are usually reduced to two-fifths, executable files and IFF bitmaps fold neatly in half.

Even IFF sound samples, notoriously difficult to compress, are cut down by a quarter.

These are general figures – sometimes you get better results, sometimes worse. The only thing wrong with LHArc is that it's purely command-line driven, and has lots of confusing options. What's needed, is a Naive User Interface for LHArc, something everyone can use.

Stefan Boberg has given us LHArcA V0.99c on Fish Disk 331. You can do everything with the mouse, except type in file names. Storage devices appear as little icons, and any file operations are controlled by the standard ARP file selector.



LHArcA grab

You'd think that this friendly version would be slower than the real thing. Not so. The compression and extraction routines are written in carefully optimised assembly language, so LHArcA is not merely the most efficient, it's also one of the fastest archivers around.

The final version will support ARexx, have on-line help, and create archives which will automatically extract files from themselves.

Even though the original Amiga LHArc is free, Stefan would like the samll sum of $15 registration. This is not excessive by any means (under £10) for such a fast, easy to use product.

PCopy 2.0

PCopy 2.0 is a copying program that's just as fast as the well-known copier X-Copy, but unlike that program, is quite happily multitasking with anything else. It does require two drives (Diskcopy will work with one) but cranks out a perfect copy in just 68 seconds. If you want to make sure that the copy really is perfect, call it 100 seconds for full verification.

If that's not fast enough, you can lock out most other tasks and save a few more seconds. For real speed fiends, you can set PCopy to autostart as soon as there are disks in the drives.

A neat feature of PCopy is that it shows a history log of the current session. That means if you've a batch of disks to do for several people, you know exactly how much aimless hanging around you still have to do before you're done.

PCopy 2.0 was written by Dirk Reisig, a name you may remember for the excellent Tracksalve we put on the coverdisk months ago. You'll find the program on TBAG Disks 40. Yes, two disks make up collection 40, to celebrate the interesting new format that the Tampa Bay Amiga Group uses.

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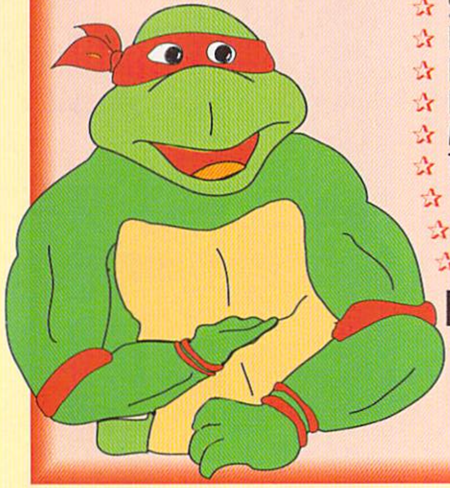
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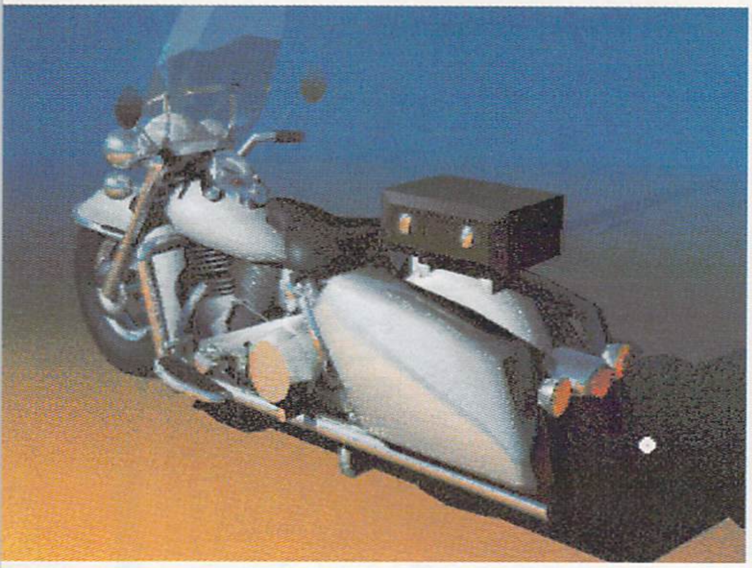
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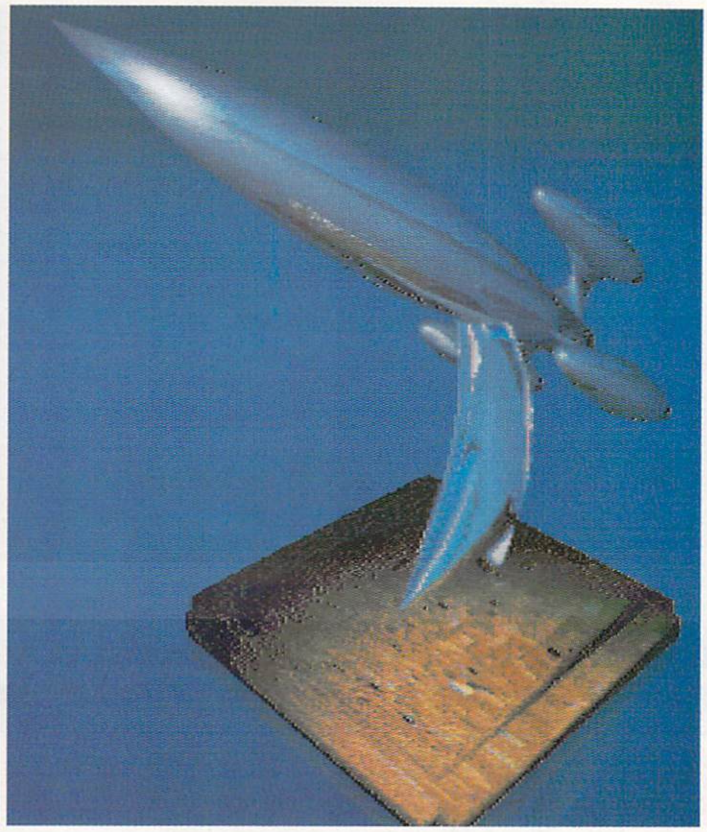
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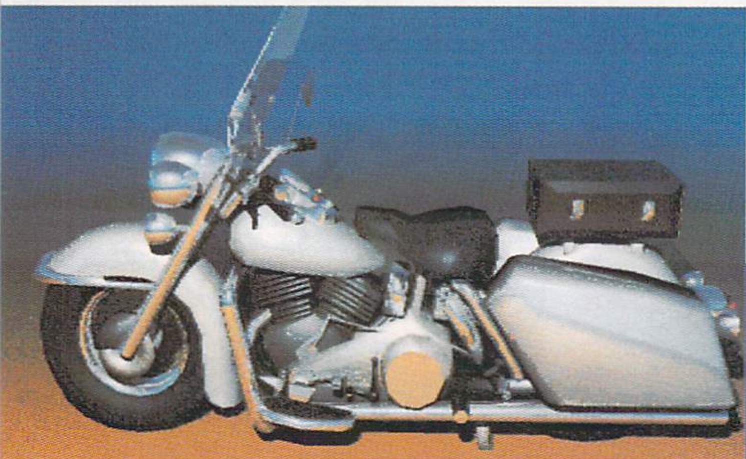
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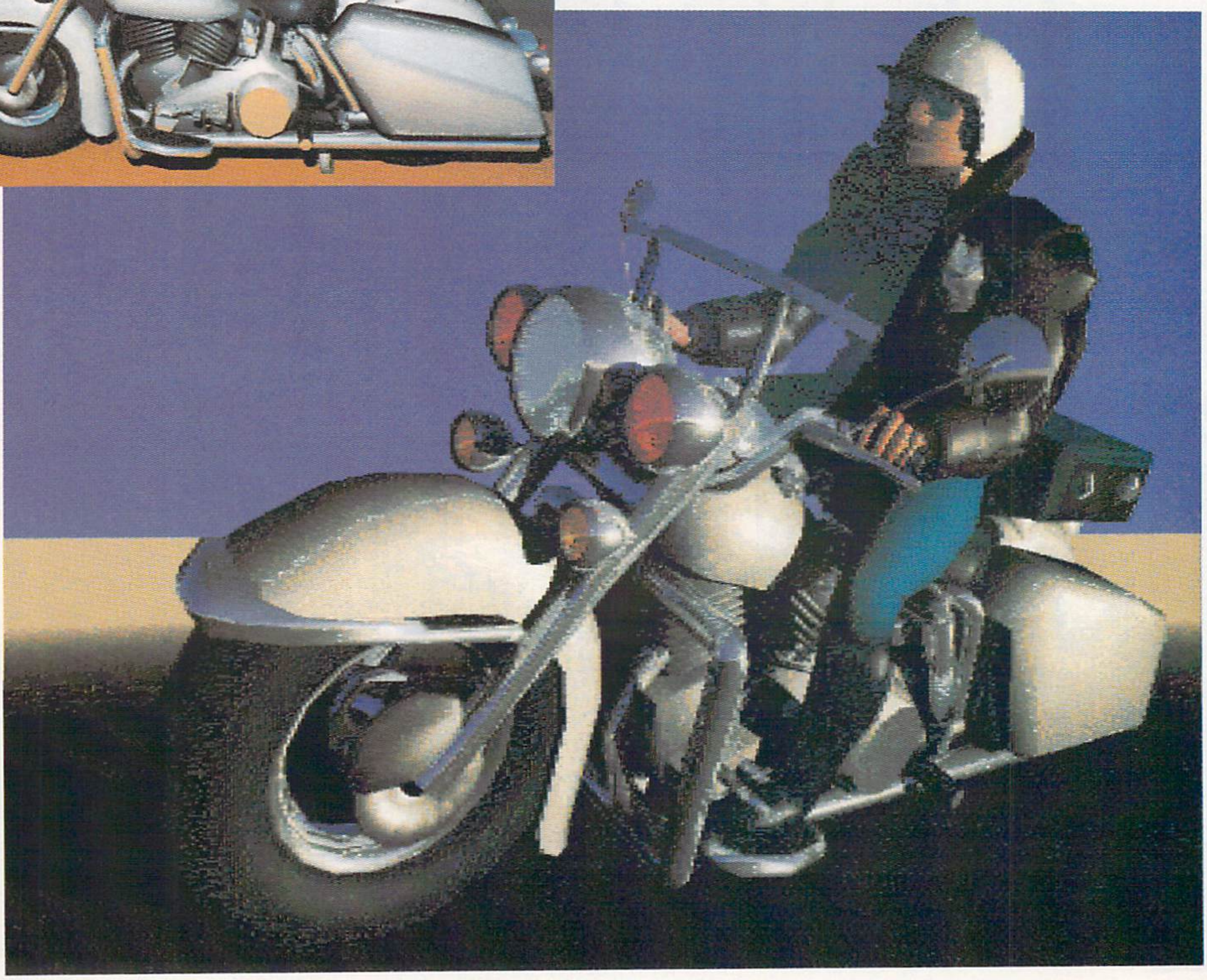
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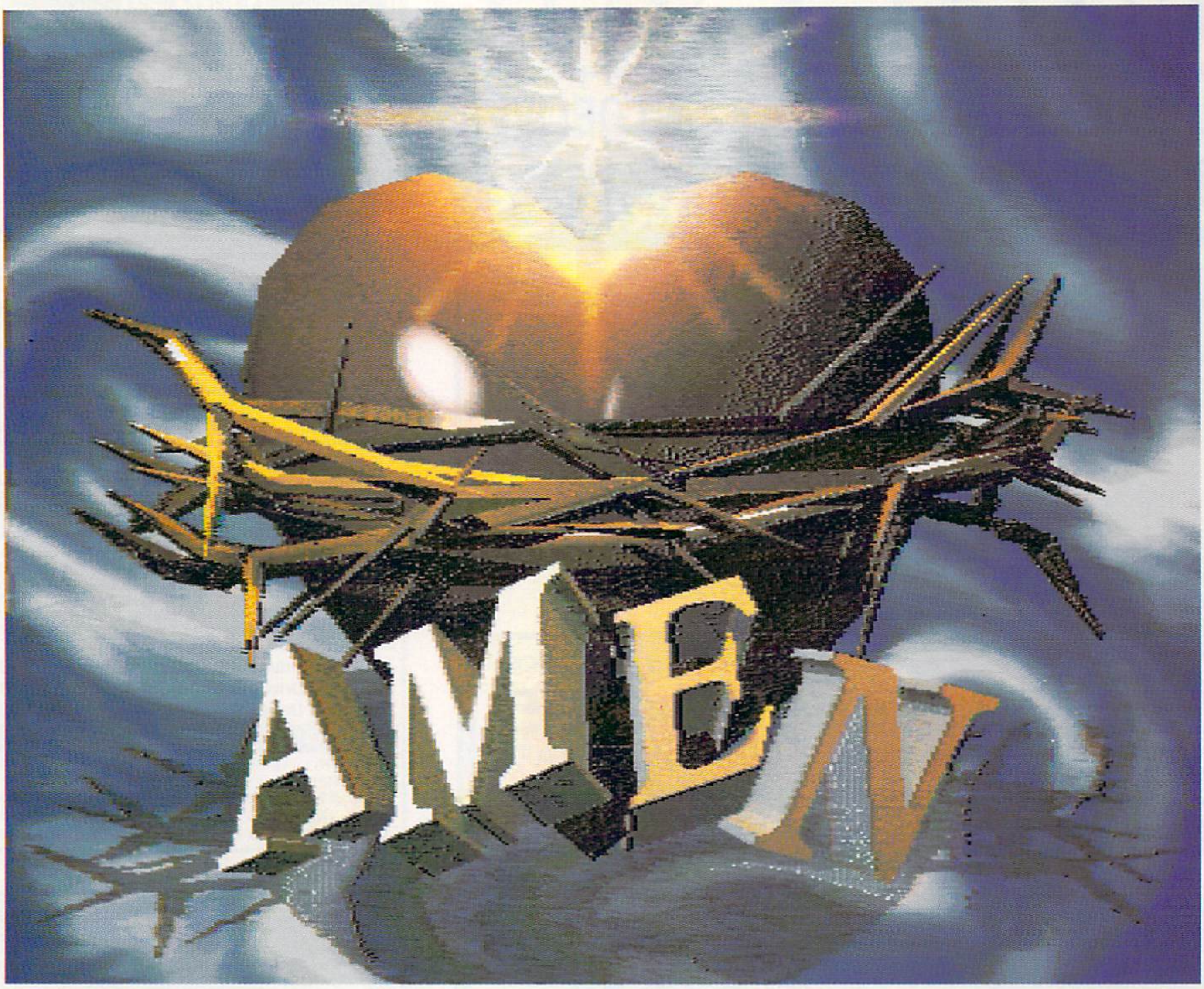
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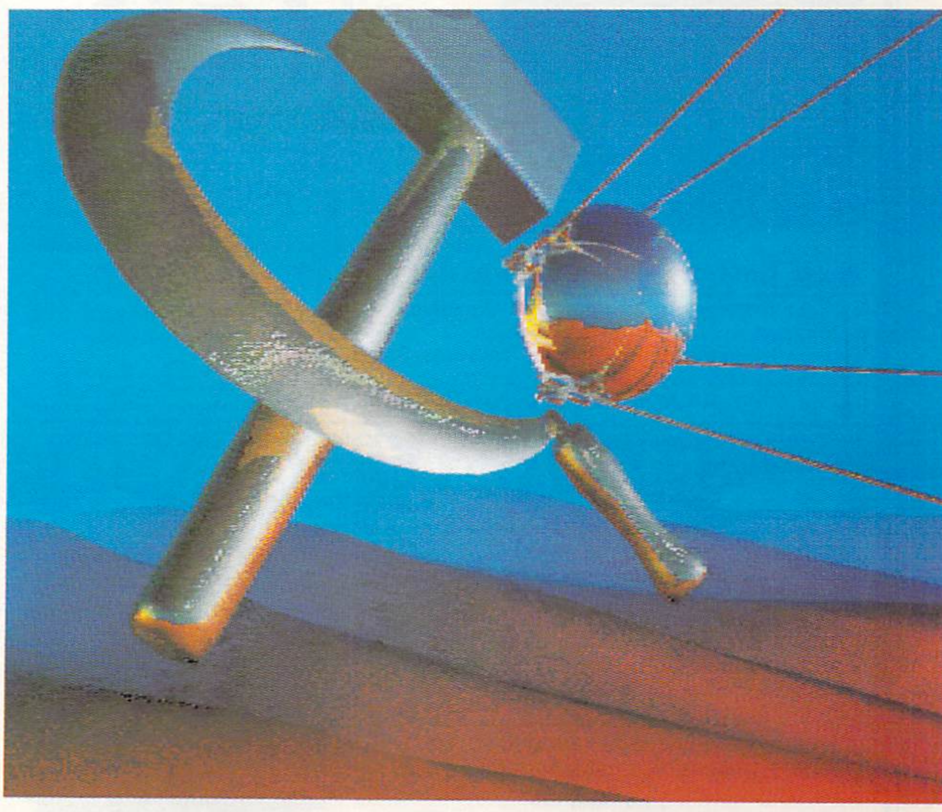








the Gallery



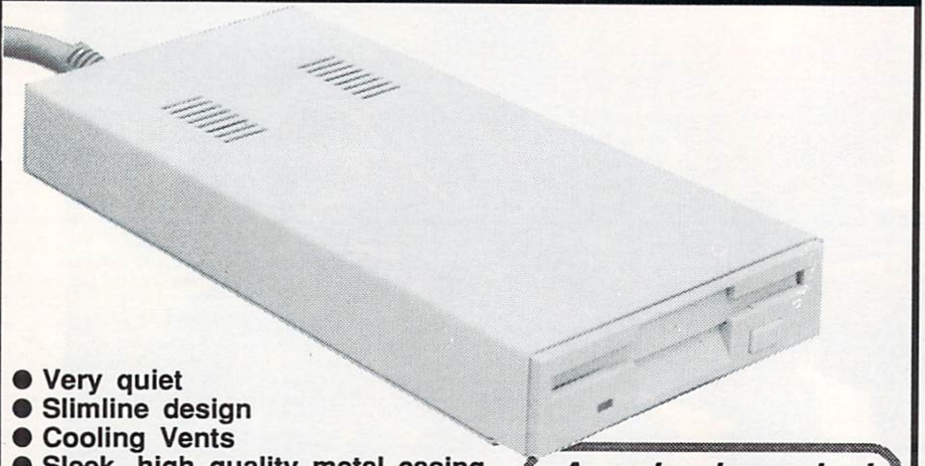
This month's Galery is entirely given over to the work of Señor Curro Astorza from the fair city of Barcelona. Normally, we prefer to give as many readers as possible the opportunity to display their talents, especially if they have not done so before, but when we saw these piccies we decided to make an exception.

Curro tells usthat he uses a 9Mb Amiga 2000 with a GVP hard drive, designing his *objets d'art* in Sculpt 4D before rendering them in Turbosilver, and adding textures with DPaint III. This three-stage process, he says, is a bit like a computer triathlon event, and if that's the case Curro, then I reckon you're a real gold medal prospect. Feast your eyes on these...

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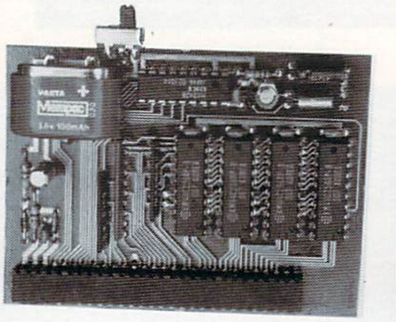
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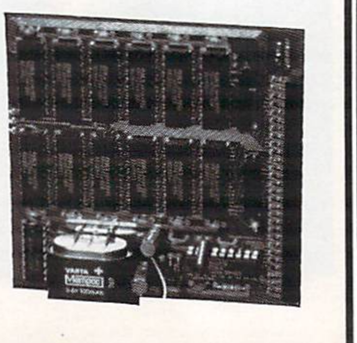
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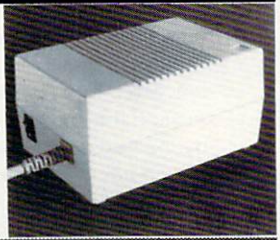
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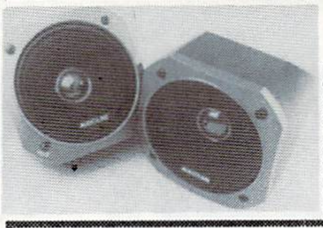


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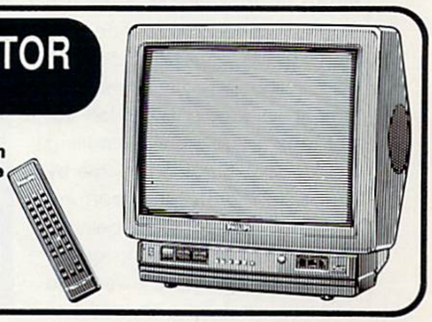
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ColourPic

At last, real-time colour video digitising at a reasonable price. Paul Austin investigates ColourPic...

In the not too dim and distant past, if you wanted to grab an image from a moving source such as a video camera, TV or VCR, it was a simple process as long as all you wanted was straightforward black and white. If, however, you required a colour image it was a different story. Black and white images could be easily captured by a so called 'real-time' digitiser such as Digipic, but in order to generate a colour picture, three separate images where required, each filtered through a colour filter using an RGB colour wheel.

Due to the need for three exposures of the same image, the subject had to be kept perfectly still while each component of the colour image was digitised. Needless to say, the finished product was often ahem, less than perfect - usually rather dull in fact. An alternative to the stone age colour filter approach was desperately needed and into the arena stepped ColourPic.

You may think such add-ons for the Amiga are like furry dice and go-faster stripes on an X-reg Escort - an illusion of power. Given a little thought however, numerous applications soon arise adding picture files to a database for example. It's also possible to reduce pictures generated with ColourPic to a quarter screen or less, making storage of large numbers of captured images possible even on with a floppy-based system.

Pictures produced using ColourPic are saved as IFF files and can be used in many popular paint packages. The feature also allows access to DTP software, making it possible to import TV or video images direct onto the page. Picture composition and general educational programs can also be greatly enhanced using the equipment. And last but not least there's always pulling stupid faces, harassing people by grabbing them at inopportune moments and generally being a pain in the behind - hard to resist.

Fine, but how does it work and what can it produce? Well you can import a captured image direct into the Amiga. This can be done in several formats including 320 x 256 HAM, HAM+ and 32 colour mode. If you're really rolling in cash, you could always go the whole hog and invest in JCL's RAM expansion, which will allow you to use interlace mode producing high quality images, but the subject must be completely static as the image is digitised in stripe mode and imported directly into the Amiga. Interlace mode can take several minutes and the usual problems associated with interlace still persist (ie the famous flicker) which occurs if any movement takes place between the two fields of the interlace image. The finished product however, is very impressive.

Monochrome images can also be captured via ColourPic and this is achieved by adding together the three elements of the RGB data from the video signal, the result of which is then imported as a 16-level monochrome, greyscale image. A particularly useful pull down menu in the ColourPic software allows access to various tools for manipulation of a monochrome image and with a little practise, some very interesting and professional results can be achieved.

Lower resolution formats, such as HAM and HAM+ (which I found gave the best instantaneous results) sample every one fiftieth of a second which is as fast as the signal is generated by the camera or VCR. At these kind of speeds, movement is captured with the minimum of blurring and this alone is a big plus for the system.

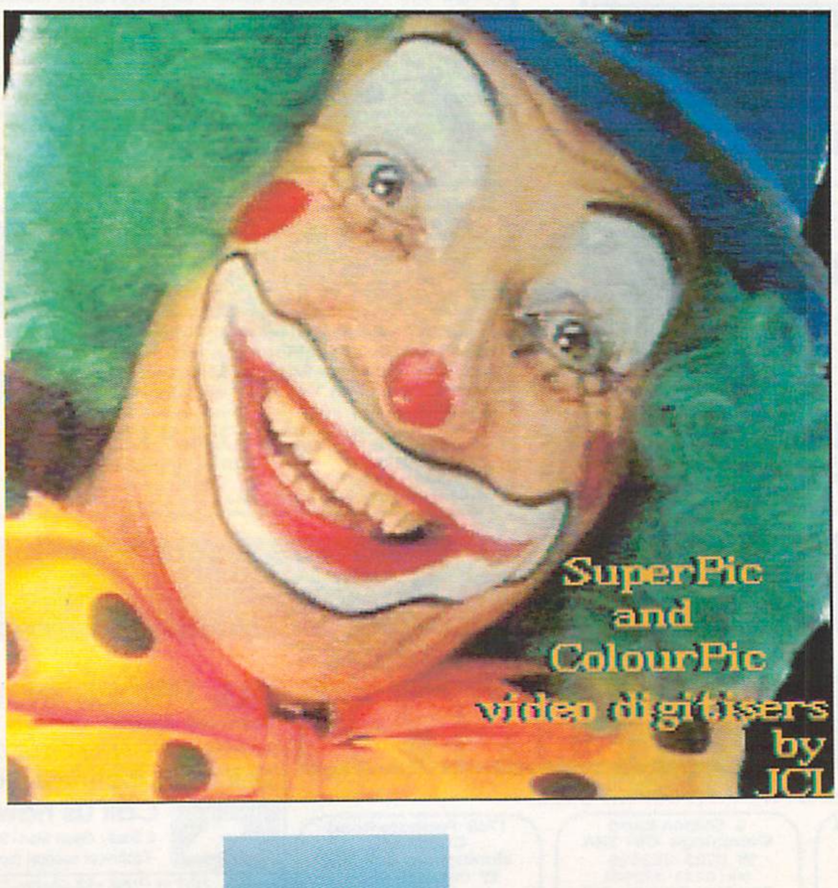
ColourPic's hardware is, in effect, an instantaneous frame store (or image buffer if you prefer), which takes snapshots of the subject. The image is overwritten by the next until the appropriate Amiga key is pressed, and the image frozen. When a good result is achieved, the image can be imported into the Amiga and from then on, the choice is yours.

When an image is imported, there is a reduction in picture quality due to the screen format being used and the display restrictions imposed by the computer. Even so, images produced on the Amiga in HAM or HAM+ mode with 4096 possible screen colours are still very impressive (although there are certain restrictions on the colours which can be displayed together).

Getting it up and running

If you can control your excitement long enough to read the instructions, installing the equipment is a relatively simple process. I couldn't, and consequently spent an entire afternoon pressing the wrong buttons.

Once the system is set up the real-time signal from the video input can be viewed on your monitor. With a 1084 monitor however, the live video signal will not work



A clown he may be, but not many would laugh at quality like this.

properly due to synchronisation problems. It is possibly to use ColourPic with a 1084 monitor, you'll just have to view the live signal via a separate monitor or TV.

If, however, you do have a monitor which is compatible with the system, it's then possible to monitor the live signal and the frozen image stored in memory by simply alternating between the two via the CVBS button on your monitor.

The chaps from JCL have been thoughtful enough to provide separate connections at the rear of the unit which enable a separate monitoring signal of the live video image to be piped out to either a second monitor or TV. This can be very useful because when an image is frozen prior to being imported into the Amiga, the live signal is lost until the system is unfrozen. If you're trying to capture movement you can miss some golden opportunities while watching a frozen screen.

ColourPic is capable of excellent results, as you can see from the grabs on this page, but it's worth bearing in mind that as with most things, you only get out what you put in, and ColourPic in no exception. I personally found that good lighting was essential in order to produce a quality result.

In most respects using ColourPic is exactly the same as any photographic project and a certain amount of experience in the field is a definite advantage. If you're serious about importing the real world into your machine, you could consider taking stills in the conventional manner and then using a scanner to import your imagery into the Amiga. This method though longer, would still give better quality when capturing movement.

Nevertheless, ColourPic is an impressive product and you pays your money and takes your choice. One of my main worries lay with the lack of any Genlock facilities but I needn't have worried, because JCL has produced a big brother for ColourPic, namely, SuperPic which does exactly that (although it will set you back an extra £100 for the privilege).

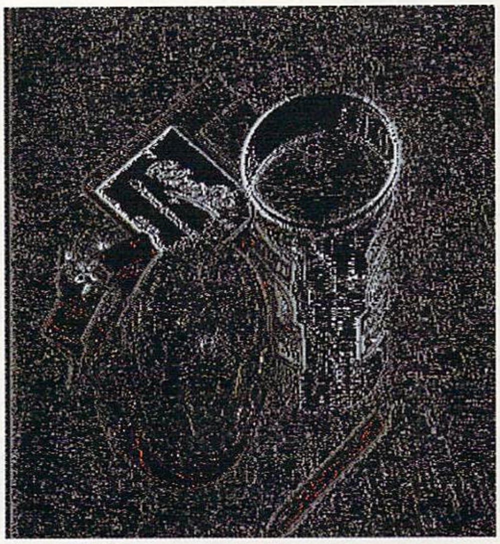
If you'd like any further information, give JCL a ring, they're a helpful bunch, and will be more than happy to sort out any questions.

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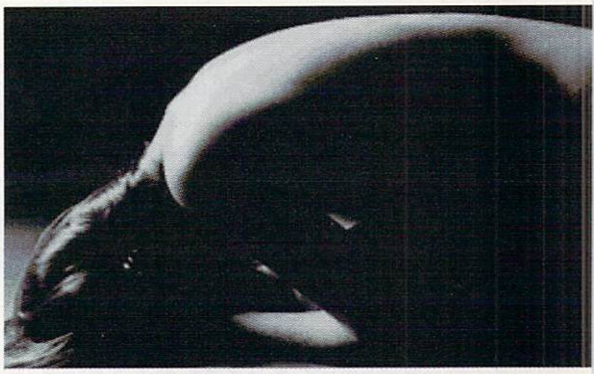

The fab four, a small sample from JCL`s show reel. All of which were created via ColourPic with no extra image processing

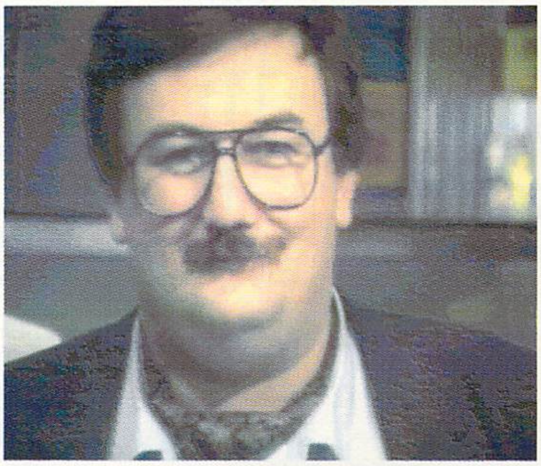



Two products of ColourPic`s instant imagery, both grabbed using a standard VCR camera.
A. Using Ham+ mode. B. Using interlace ham+ The first being grabbed instantly, the second, imported directly in stripe mode



An example of what can be produced by a pro, photographer using the system.






On the right we have the wee scottish bloke Stevie Kennedy, on the right little old me. On the left a passing punter at the commodore show, h said he was a coach driver but I think that`s a porky myself.

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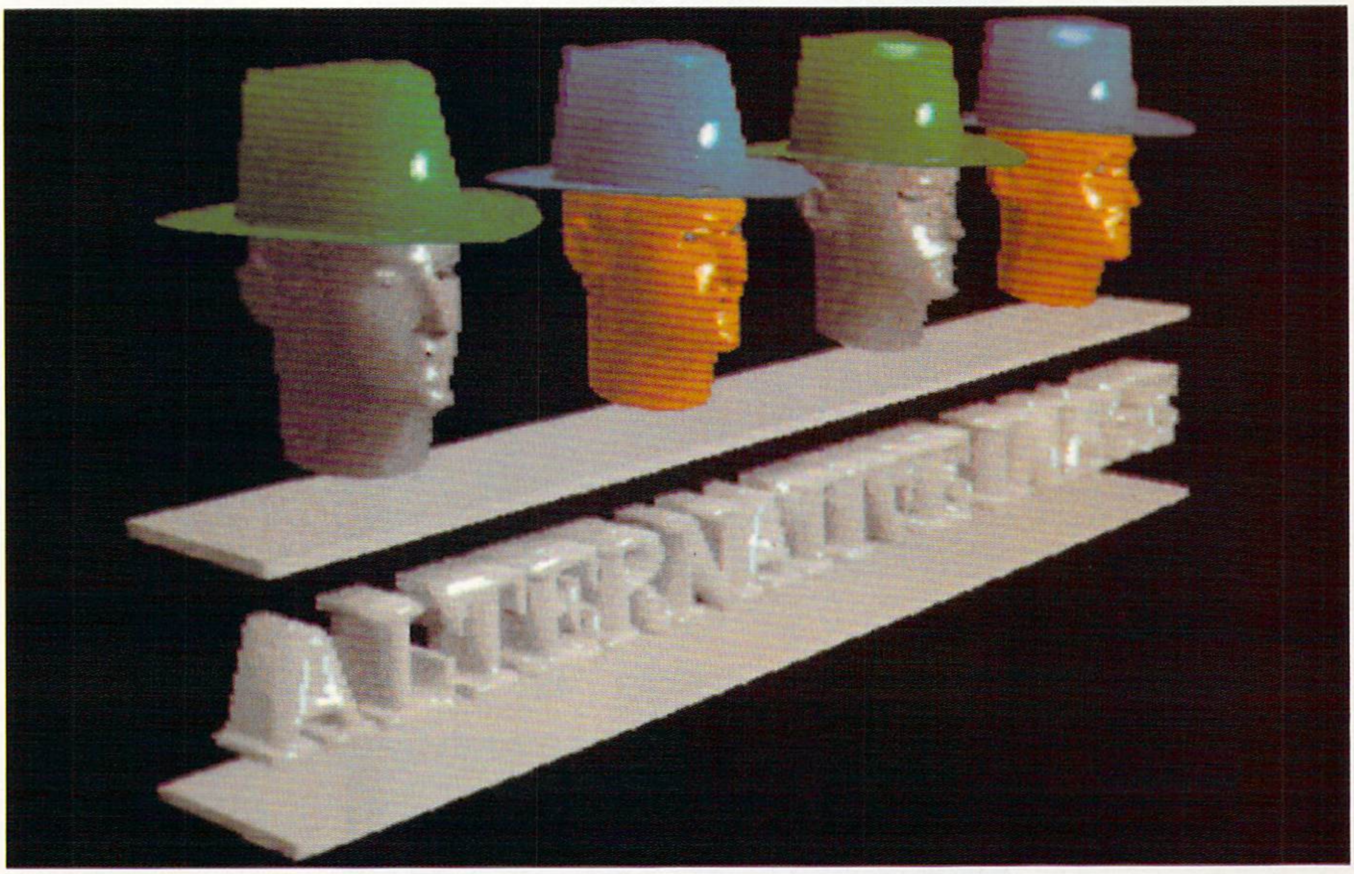
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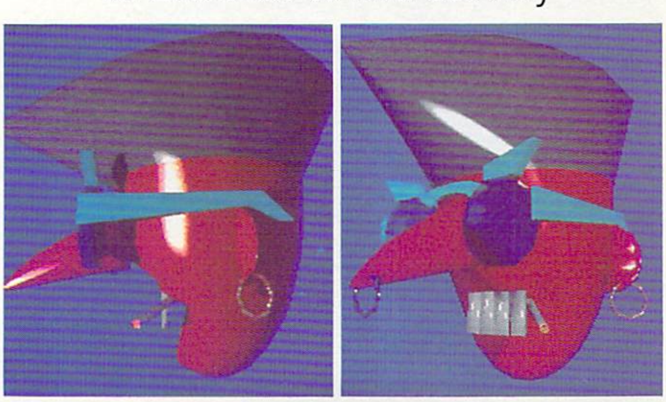
The public image of the alternative graphics company

Don't say "graphics manipulation", say "Alternative Image"! Paul Austin made the hellish journey to Leicester to find out why

After the sort of train journey horror movies are made of, I found myself at the door of Alternative Image, Leicester's answer to Saatchi and Saatchi. I discovered very quickly that first impressions can be somewhat misleading, as the business is based in a back street terraced house. I assumed the outfit inside would be, well, slightly amateur.

Once inside I realised that the house possessed the same dimensional double-tricks as the Tardis, and two minutes of conversation with Henri Bujko and Stuart Hicking convinced me that guys with that sort of cynical arrogance most certainly know what they're taking about!

The duo are two of the three-man partnership which constitutes Alternative Image. The company caters for various media requirements including DTP, audio visual displays, video production, photography and last but not least, computer graphics the latter being the main reason for me boarding the train to Leicester.



The head man at Alternative Image mini animation on this month's cover disk

All the graphics they produce are created solely on the Amiga, using software that is available to everyone. When the results are viewed on their show reel, even an old cynic like me was suitably impressed. If you'd like to see your own creations on slides, as prints or even on video, the company can provide them at very reasonable rates.

Aside from expert opinions on graphics, which I'll get to later, Alternative Image is in the process of branching out and releasing software which it has designed itself. The reason for this is that they simply could not find commercial

software to do what it required. Being rather clever chaps, the trio wrote their own and the end result of these endeavours will soon be available to everyone.

Utility city

The first of the range, ready just in time for Christmas, and is a caption scroller program which creates titles for use on video. All the text is produced in hi-res, with four definable colours, and each colour can be used on separate characters if required, using eight separate fonts each in two sizes.

Text can be re-sized, even when the program is running, with just a single key stroke, and all alteration to text or font occurs instantly. Thanks to the use of a type ahead buffer even the biggest fonts appear immediately when you type them in.

Scrolling can be either horizontal or vertical and can be speeded up or slowed down to the required speed again with a single stroke.

Several keys control the entire package, which is very fast, professional and easy to use. It retails at around £50, with a minimum 1mb required. The only other package capable of doing this sort of thing is ProVideo Plus although it can be a little tricky to use.

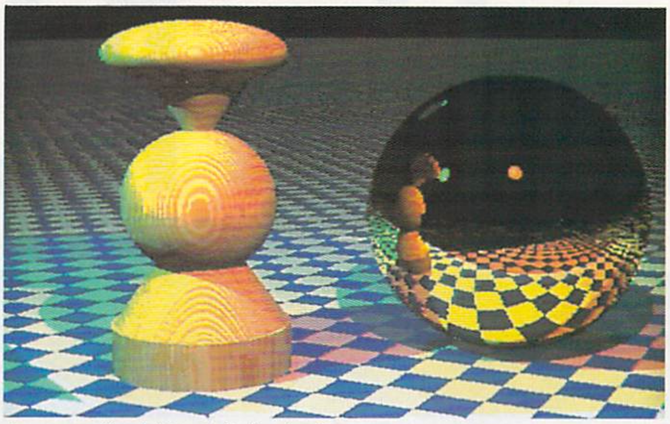
The next product Image is working on is a title sequence designer which should be ready for release later this year. It's hoped this will bring the home user the sort of whacky tricks presently only available to outfits like the BBC.

The dynamic trio assured me that this wonderful thing will send words and letters flying and spinning around the screen at your command. The end result should be a very professional look to home produced video.

The next release could be an autocue available around the same time. This is obviously a more specialised utility which will be be capable of reverse text for mirror-imaging onto glass. It will also be possible to import ASCII.

Writers need only take an Amiga to the studio or wherever it's required, plug it in, load up the text from any word processor – providing it's saved as an ASCII file – and the result will be an instant autocue, ideal for TV, video, conferences or even amateur dramatics. South Pacific may never be the same again.

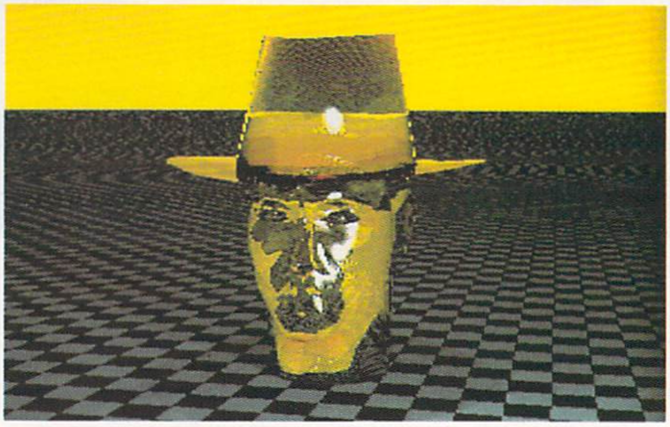
The fourth and final project planned for this year will be a new clip art disk. Not a new concept



A pepper mill and shiney ball – they had to appear somewhere



Showing their true colours, everyone wants to be a rock star



Sam Spade in the twenty first century



What the pro's use, but you can still do a lot with less

perhaps, but designed to fill a hole in the market due to the fact that clip art now available leave a lot to be desired.

The disk will have vector objects, backgrounds, and various groovy things that have been produced as a result of 'Image's work.

As an addition to all the other irons already in the fire, the chaps are about to start a consultancy for people needing help and advice in the general graphics arena. The reason for this is the large amount of time spent answering the phone when the trio should be earning cash.

At the time of my visit to the company, it didn't have any details of possible cost, but I'm sure the guys will furnish you with the facts if you give them a ring.

Give 'em a call

Are you having problems with dot angles and densities in DTP or a moiré pattern where it shouldn't be? If so, 'Image could be the people to end your misery. Unfortunately, the graphics gurus would not tell me how such problems are solved, but they may tell you for a small fee.

They did mention, however, that if you're looking for a DTP package, then in their opinion, you need look no further than ProPage – I'm assured it's the best desktop publisher available.

If you're willing to wait a while ProPage 2.0 should be on the shelves soon, and judging by the excited way Henri was describing it, it's well worth the wait.

According to him, no matter what anyone else says, Sculpt 4D is still the best ray tracing package due to its excellent object modeller and a very fast rendering time. He did admit, however, that the animation can be a little dodgy, and the lack of texture mapping was a real problem.

It's worth bearing in mind that these people have to work fast and may have to produce in a week what the rest of us take a year over.

Real 4D was the next topic of conversation. Henri agreed that the program's texture mapping is brilliant, although he thought the rendering very slow compared to Sculpt 4D.

In general he didn't think much of it, due mostly to the massive amounts of memory required to produce relatively simple animation. He did feel, however, that the package would improve in time

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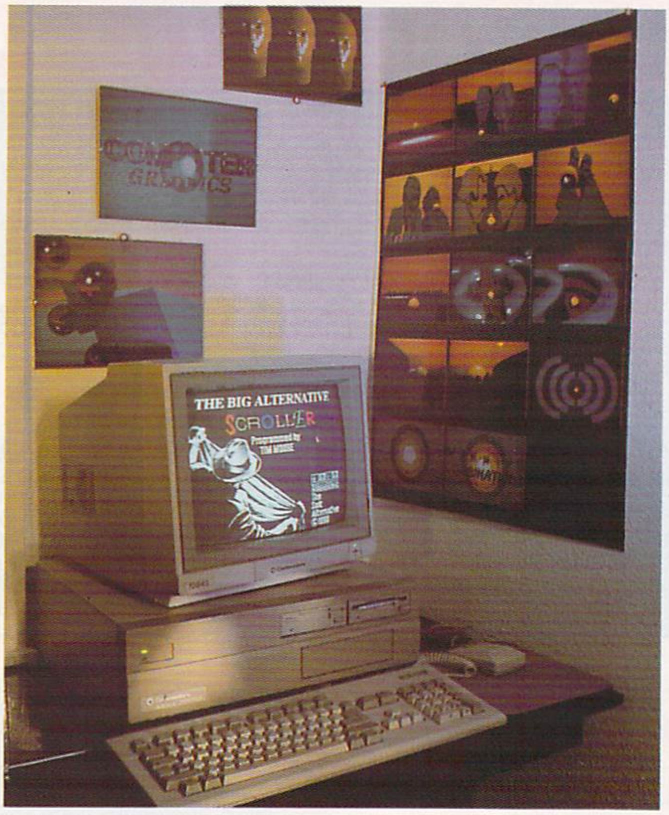
once memory management problems were solved.

Turning to Turbo Silver, he felt that although excellent results could be produced, the main problem was the program's front-end which, in his opinion, was very badly designed and tricky to use.

The next program to come under the critical microscope was 4D Professional – criticised for the strange animation problems concerning textured objects which, in Henri's experience, caused the object to move but the texture to stay where it was, as if these objects were rotating inside a strange stationary skin.

If you're interested only in animation, Henri's top tip is VideoScape. He admits the rendering is not up to the standard of some of other packages, and it doesn't really ray-trace, but the animation sequence I was shown produced with VideoScape was very impressive. Henri assured me that to produce something similar on even Sculpt 4D, would have taken ten times as long.

Another big advantage with VideoScape was its excellent memory management, allowing very long and complex animation sequences to be created using tiny amounts of memory. This effect is achieved by creating the model, then performing the required calculations for movements via ASCII file co-ordinates. The model is then altered according to the co-ordination data supplied by the ASCII file.



Here's the guy who does the real work, some of it hung tastefully in the background

This is a massive advantage as the resulting file is tiny in comparison to some other packages available, and editing is a very swift, simple process. Re-rendering the whole image is not required.

In most other packages, each frame of movement is saved individually, which then has to be separately rendered. This can take a very, very, long time and an excessively large amount of disk space – something which is at a premium as every Amiga owner knows.

All animation in VideoScape is controlled via x, y and z co-ordinates, which require a certain amount of getting used to. But Henri thinks it's brilliant.

For more information concerning the company and its products give them a ring 0533 440041.

Finally, many thanks to Henri and Stuart for all their help, coffee, and pizza...



The Christmas card conversion, featuring the good and the bad, and the rest of the staff

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AMIGADOS: A Dabhand Guide

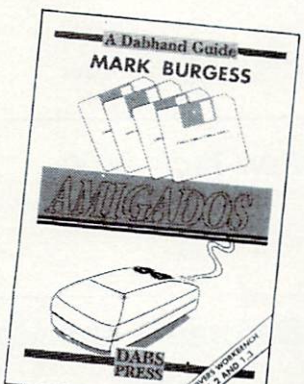
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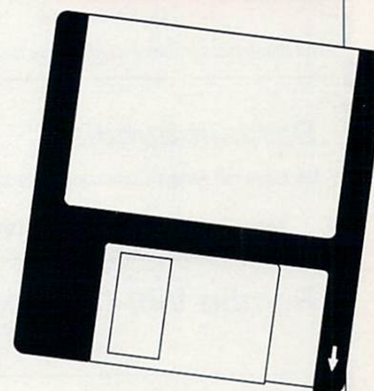
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(See page 110)

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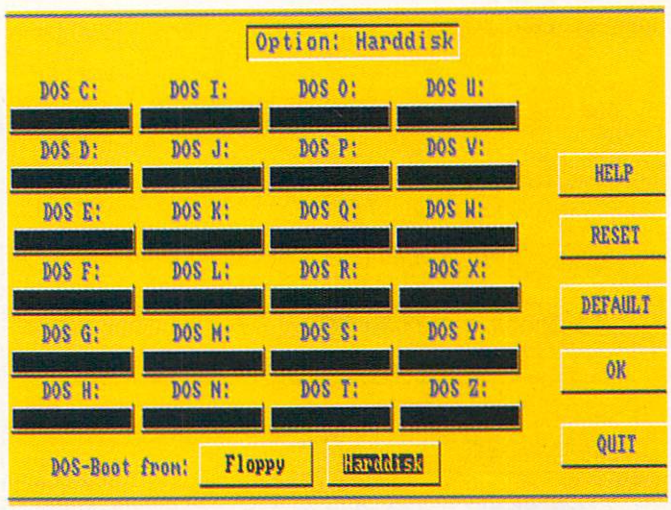
POWER PC

Vortex's long awaited ATonce AT emulator is finally here. Jason Holborn gets it on the test bench

No one ever got fired for buying IBM or so the old saying goes. It's a sad fact that IBM has gained itself that sort of power. First time corporate computer buyers are duped into buying under-powered PCs just because everyone says that IBM compatibles are 'the safe option'. Even when someone tries to bring a breath of fresh air to the corporate computer scene, the old guard trundle out and slam the machine just because it won't run IBM software.

In the early days, the Amiga suffered terribly from this syndrome. Commodore unwisely pitched the machine directly at the business computer market, which brought it into direct competition with the established PC standard. Everyone loved the machine's graphics and sound capabilities, but few corporate buyers bought one because it wasn't IBM compatible.

Indeed, if it wasn't for a change in marketing direction, and brand loyalty from existing users, the Amiga could well have died long before the birth of the second generation machines, the A500 and 2000.



The main installation screen

Emulation solution

Commodore's answer to those concerned about the lack of IBM compatibility was a nifty little device that plugged into the side of the machine. SideCar, as it was called, was a clever box of tricks that effectively transformed the Amiga A1000 into a PC-compatible computer without the need for major open heart surgery.

For about £600 you got a snail-paced 4MHz XT emulator and a 5.25 inch drive, all of which was housed within a case nearly half the size of the machine itself.

This then was the Amiga's first ever emulator. It weighed a ton, cost a fortune and to top it all, was very slow.

Thankfully things aren't as desperate these days, but that's not to say there's no more need for a good PC emulator. Far from it. The latest arrival is Vortex's ATonce, an emulator that certainly boasts an impressive specification. It is as the name suggests, a PC emulator which emulates an Intel 80286-based AT compatible computer.

OK, nothing particularly special so far, but there's one thing that really makes ATonce stand out, its price. At just under £200, it is not only one of the cheapest PC emulators available, but it also just happens to be one of the most powerful.

Apart from Commodore's own AT bridgeboard which costs considerably more than either ATonce or KCS, it is one of the first PC emulators to take advantage of the powerful Intel 80286 processor, which is the 68020 of the PC world.

Once you've handed over your £200, you'll be presented with a tiny box containing little more than two disks, an even tinier manual and the ATonce hardware.

The first thing that will strike you about it is its size – if you thought Bitcon's KCS card was small, just wait until you see ATonce. It really is tiny. The card itself is so small that it could quite easily get lost under a floppy disk. But, as the old saying goes, the best things in life come in small packages, so you'd be wrong to judge ATonce on size alone.

The hardware actually consists of two separate items, both of which must be installed internally inside an Amiga 500 or 2000 using a separate adaptor. The second item is a Gary Module – that's what the manual calls it anyway – which is basically a chip holder with a resistor bridging two of the contacts that sits between the Gary chip and its socket.

According to Vortex, this extra piece of hardware is necessary to allow ATonce to run at its maximum speed.

The presence of this Gary Module is one reason why ATonce won't work with the A1000. The machine doesn't have a Gary chip. Gary, or MOS 5719 0189 42 to the techies among you, didn't actually join the rest of the Amiga custom chips until the release of the 500 and 2000 series machines. As a result, A1000s are out in the cold. Oh well, such is the price of technological progress.

Vortex is justifiably proud of the ATonce PCB. Using the latest SMT – Surface Mounted Technology to you – circuit design, Vortex has managed to keep the size of the ATonce hardware to a minimum. As a result the board draws very little power so your Amiga power supply isn't put under too much strain.

Nuts and bolts

Installing ATonce certainly isn't a job for the faint hearted. For starters, it certainly isn't a plug in and go affair like its main rival, the KCS card. No sir, instead you have to open up the A500 – thereby invalidating your warranty – remove the 68000 chip from its socket and replace it with the ATonce PCB. Surprisingly, it comes complete with its own 68000 chip soldered on the underside, so your old 68000 can be stored away for possible future use – if you can find one.

Vortex claim that this was necessary to maintain compatibility with all Amigas. Personally, I'm not convinced. What do you do if your Amiga is fitted with a 16MHz 68000 or a even 68010? Well folks, there's a simple answer to that question you're stuck.

About the only solution would be to try and find someone who produces a device that allows two 68000s to be installed simultaneously. I haven't actually seen such a device, but it shouldn't be too hard to knock one up yourself.

Be careful when Installing the ATonce PCB. The card uses CMOS technology which is very sensitive to static electricity, so take precautions when handling it. If you don't I can virtually guarantee you that

you'll fry ATonce at once. Better still, get an experienced electrical engineer to do the job for you.

Installing the Gary module is the second job, which is actually pretty straightforward. This time you have to remove the Gary chip and then install it onto the module. This is then plugged back into the slot previously occupied by Gary.

Once this is done you can put everything back together and start thinking about running all that lovely PC software.

Software express

If everything goes well, you're now ready to get ATonce up and running. Boot up the program disk, double-click on the ATonce icon and your new acquisition springs to life.

After a brief memory check, the PC displays a few lines of system information and then sits back waiting for a boot disk. A quick search through the bundled disks soon reveals a major problem you don't actually have a boot disk. Vortex, in its infinite wisdom, don't actually bundle MSDOS with ATonce, so you're going to have to look elsewhere for this.

If you already own a PC, then it isn't too much of a problem. After all, you can use the copy of DOS that came with that machine, as long as you don't use both machines at the same time, of course!

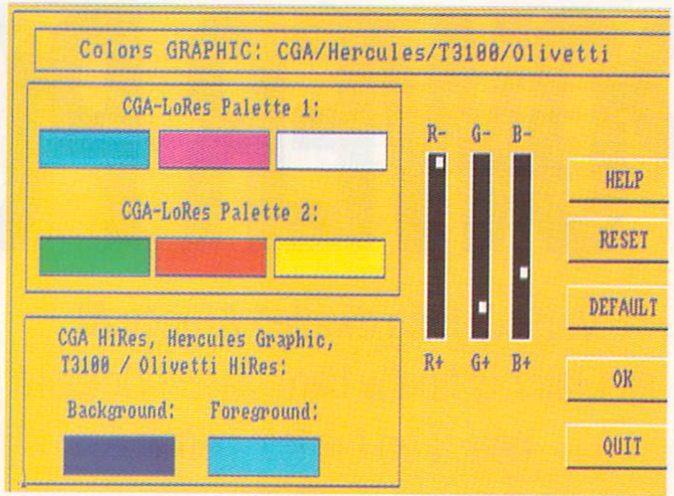
However, if you don't have access to a copy of MSDOS, then you'll have to dig deep once again and fork out around £40 for a copy of the PC's operating system – the latest 4.01 version of MS-DOS will actually cost you £80.

Thankfully, SDL can also supply this, so you may want to add this to your shopping list when you order ATonce.

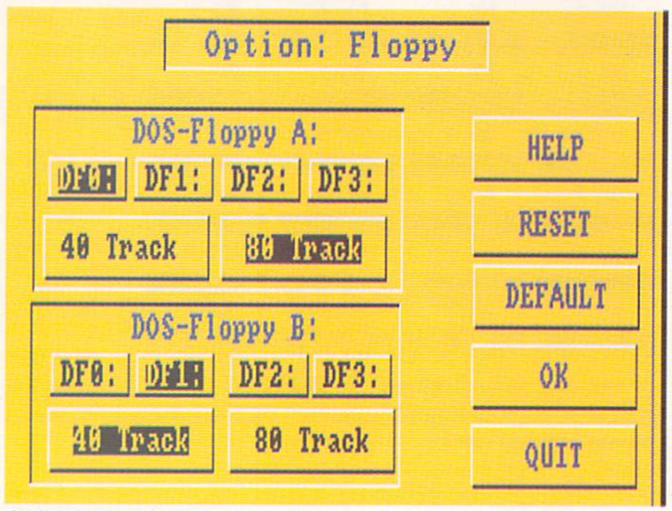
PC plus

MS-DOS problems sorted out, your hybrid Amiga-based PC should now boot up to the familiar MS-DOS A> prompt. From here on, things are exactly the same as they are on a real PC. But hang on a moment, there's something strange here. Every time you put a disk in the drive the Amiga still performs the usual read check. Surely this isn't necessary under PC emulation? After all, real PCs don't do it!

Well, in some ways you'd be right, the PC side doesn't need to access the disk each time a disk is



Lots of options, but CGA is slow



Control your floppies with ease

inserted, but AmigaDOS does. Put simply, ATonce is the first ever truly multi-tasking PC emulator for the 500.

OK, such things are old hat to A2000 owners, but AmigaDOS and MSDOS running concurrently on a 500? Some thought it impossible, but here it is in glorious technicolour, a fully multi-tasking PC environment for the 500.

At last you can run both PC and Amiga applications concurrently – memory permitting of course! – something that is sure to make PC owners green with envy. Being able to run PC software on an Amiga was bad enough, but to run it as a task?

It really is adding insult to injury. Multi-tasking support is the one feature that really makes ATonce shine.

Also on the program disk is an additional installation program, which allows you to alter different aspects of ATonce's operation. For starters you can specify the screen emulation to be used. Four major screen modes, are supported: CGA, Hercules, Olliveti and Toshiba 3100, with up to 16 colours.

For most applications, it's best to use a mono screen mode because screen update tends to slow down considerably when using ATonce in 16 colour CGA mode. It's a shame there isn't support for some of the more recent PC screen modes. EGA would be possible, but VGA would certainly need extra hardware to be emulated successfully.

You can also assign Amiga drives to their MS-DOS equivalents. By default, ATonce treats DF0: as drive A, although this can be changed to DF1: through to DF3:if you feel the need.

This can be particularly handy if you're lucky enough to own an external 5.25 inch drive. Although most PCs now come with 3.5 inch drives, there's still a large number of PC applications that are only available in the larger 5.25 inch format.

And it works

Ultimately, the most important aspect of any emulator is how well it can emulate. The good news is that ATonce certainly seems highly compatible. I managed to run applications such as Ashton Tate's dBase III+, Lotus 1-2-3, Borland's Turbo C, Turbo Pascal and Microsoft QuickBASIC, all of which ran first time. Due to disk protection, NextBase's acclaimed journey planner AutoRoute didn't work, which is a great shame.

I must admit that ATonce didn't seem to be quite as compatible as its rival, the KCS Card. Quite a few software titles which would run under KCS would just lock up under ATonce, leading me to conclude that perhaps KCS is the more compatible of the two.

Admittedly though, most of these were games, so I wouldn't be too worried about not being able to run them under ATonce – anyway, PC games are appalling!

Worth it?

It's been a long wait, but it was worth it. ATonce is quite simply stunning, but, and it's a big but, it certainly isn't the ideal choice for everyone. If the thought of wiring a plug sends shivers down your spine, then ATonce most definitely isn't for you unless you can talk someone else into installing it.

Then of course there's the problem of having to purchase MS-DOS separately. Vortex probably had a very good reason for taking the decision not to bundle this all important part of any PC system, although I'll be damned if I can suss out the reasoning behind it.

I also managed to find a few quirks that spoil its otherwise spotless image. Because both AmigaDOS and MS-DOS share the same drives, ATonce managed to screw up quite a few PC disks.

After losing one very major disk, I eventually decided that perhaps it's not a good idea to feed first generation disks to ATonce.

Another problem I found was that it occasionally seemed to lock up the keyboard for no apparent reason. This can be a barrel of laughs if you're using it to run professional applications software. I lost quite a bit of Turbo C code at one point something I was not happy about.

I originally thought this was a problem with my Amiga keyboard, but it continues to work on the Amiga even after the PC side has locked up, so it can't be a hardware fault. Mind you, I once had a Tandon PC that would do much the same thing if you managed to overflow the keyboard buffer. Maybe the ATonce is just emulating the terrible PC too well?

All things considered though, ATonce is an impressive product which only just loses out to the KCS card. From an emulation point of view the two are very well matched, but KCS pips ATonce to the post because it is comprehensive and easy to use. If Vortex was to obtain a distribution licence from MicroSoft and start bundling MSDOS for no additional charge, I'm sure the scales would tip in its favour. It is for precisely this sort of situation that MSDOS was written for in the first place

ATONCE vs KCS

There are now two PC emulators on the market, both of which seem to offer a stable PC environment. But when it comes to the crunch, which one is best, ATonce or KCS?

Well, from a technical point of view ATonce is the better product. It's 286-based, supports full multi-tasking, although you really need 2Mb to make this feasible, and will run a high proportion of PC software. However, the fact is it doesn't appear to be that stable.

Even with the presence of the 286 processor, ATonce doesn't seem any faster. Screen updating is much slower than KCS.

To find out their precise speeds, I fed the respected Norton Utilities SysInfo program through both emulators. To my surprise, both came out with exactly the same performance rating – 2.8, for those of you who are interested.

So what's the point in having this wizzo processor if it's no faster than a V30-based XT emulator?

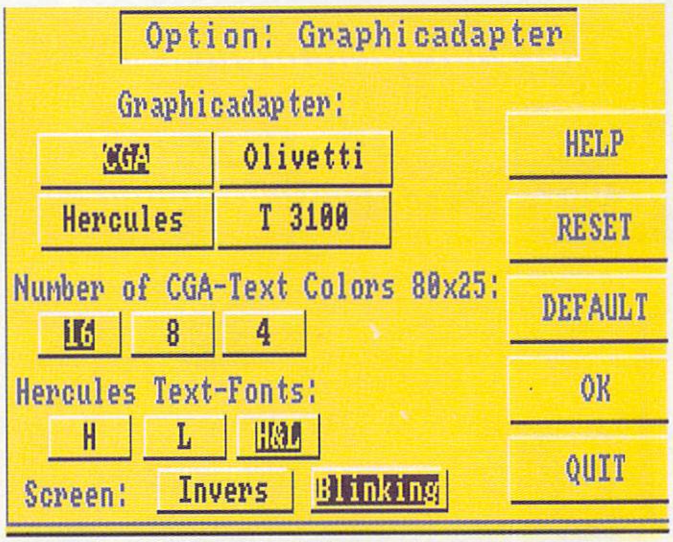
Another advantage of KCS is its completeness. For £300 you get a ready to plug in and go emulator that could be fitted and working in a matter of minutes.

Included in the price are several items of software including MSDOS 4.01, MSDOS Shell and GWBASIC. In addition this emulator kit also doubles up as a 512K RAM expansion, making KCS even better value for money.

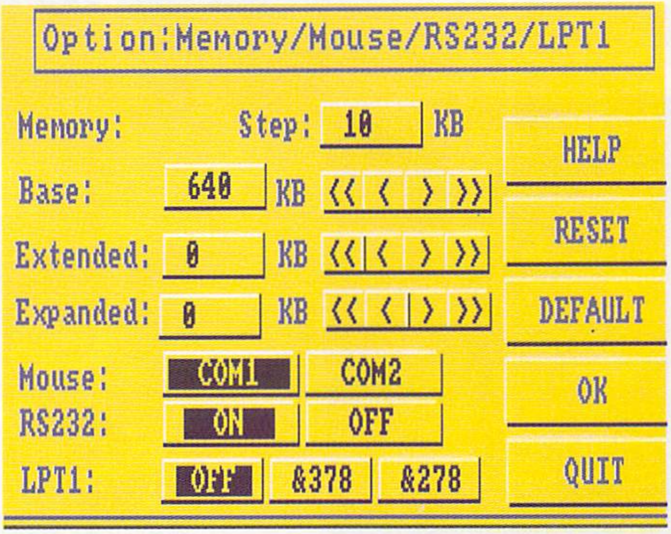
Oh well, decision time. Which should you buy? Well, I must admit that I'm not totally convinced by ATonce. It may be £100 cheaper, but the KCS card offers so much more for the extra money.

There are some acceptable excuses for opting for the ATonce though. Remember that the trap-door space, which is the only possible home for many of the new memory expansion systems, is left free by the Vortex device. The possibility of a true multi-tasking purpose for a PC emulator is another legitimate excuse.

True power users will buy ATonce just for the pose value of a 286 based PC emulator, but I think I'll stick with KCS.



Screen modes are flexible, if a bit pedestrian



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ATonce (Amiga 500. Amiga 2000 needs separate adaptor)
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THE COMPETITION

PC emulators have been with us since time began, at least it certainly seems that way, so there's a fair old selection to choose from if ATonce isn't your cup of tea.

● Bridgeboard. A2000 users have a choice between both an XT and an AT emulator card that fits internally to the Amiga A2000 upwards. Both come with a single 5.25 inch drive which can also be fitted internally, making it quite a nice compact solution. Problem is though, they certainly aren't particularly cheap. The basic XT emulator is nearly £400, while the AT versionr is nearer £800.

● Transformer. If you're totally and utterly skint, then Commodore's feeble software-based Transformer emulator is about the cheapest available. It runs at about 0.00001 MHz, making even the performance of a ZX81 look impressive. Unless forced by poverty, steer well clear of this dodo.

● KCS Power PC Card. Bitcon's acclaimed KCS Power PC card is about the only emulator that can challenge ATonce.

It runs at a very respectable 8 MHz, reads and writes PC disks and it even doubles up as a half meg RAM expansion! It costs £100 more than ATonce, but you also get MSDOS 4.01, MSDOS Shell and GWBASIC software thrown in.

● SideCar. For A1000 users – don't knock it, the A1000 is still a fine machine – Commodore's aged SideCar is about the only option available.

If you search hard, you may be able to pick one up – at a car boot sale probably! – for about £200.

● A real PC! Time to face the facts. PCs can be picked up quite cheaply these days, so you shouldn't ignore the option of buying a real PC compatible.

Amstrad pioneered the cheap PC market, but even they have since been beaten in the who-can-produce-the-cheapest-PC stakes. If you look around you could pick up a PC for as little as £300!

Obviously, a real PC is the best bet in terms of compatibility, but you must also consider that buying an extra machine will take up a lot of extra desk space.

Most importantly though, you'll also have to fork out for another monitor if you intend using both machines simultaneously.

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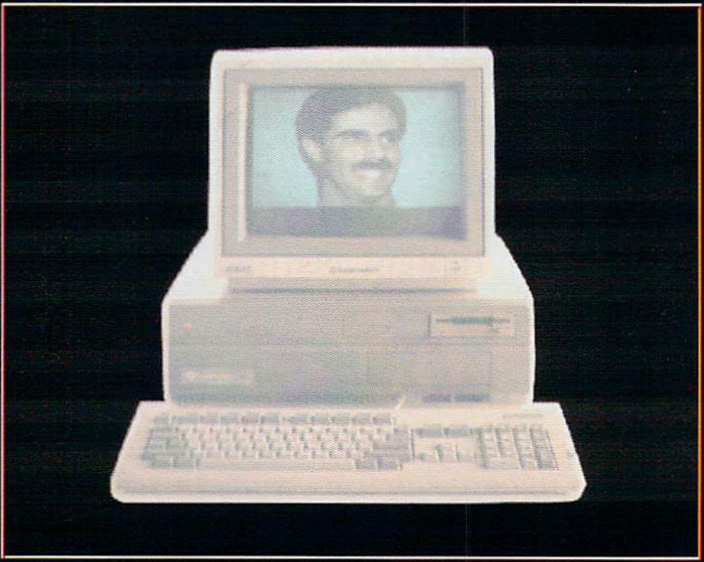
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The Tipster

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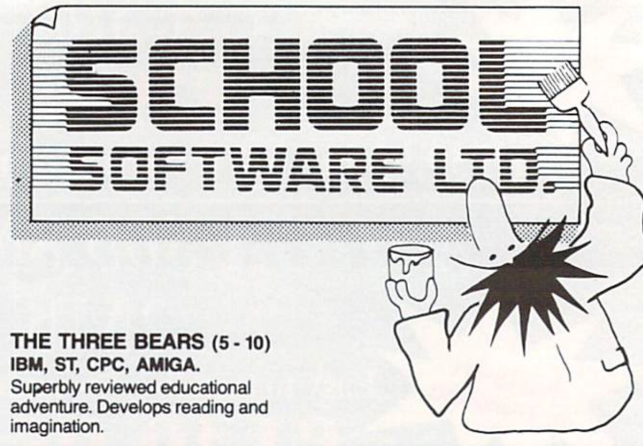
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Exam time

I am a third year student at Napier Polytechnic studying printing (administration and production). As part of my course work I have to complete a project The Implications for Colour in Desktop Publishing using an Amiga I would be very grateful if you could give me any information on the following questions.

1. Just how effective do you feel colour desktop publishing is compared to traditional typesetting methods?

2. What are the advantages to the magazine designer using a colour desktop publishing system?

3. What are the new design possibilities offered by colour desktop publishing systems?

4. What does colour desktop publishing imply for the production of the magazine?

5. What do you think the implications are for the magazine industry regarding advancing technology in desktop publishing?

Any help with the above would be most appreciated. I look forward to hearing from you.

Andrew Markin, Edinburgh.

Jeez, you didn't even attempt to disguise the exam questions did you? Lifted straight from the paper as I live and breath!

Well, Andy, I'm not going to help you to cheat by answering your questions in full –here's a potted version.

Colour desktop publishing compares favourably with traditional methods in terms of quality. Old printing sweats will probably tell you that there's nothing like the old way of doin' fings, but to the untrained eye, there's very little difference (particularly in magazine and newspaper publishing).

As for speed and freedom of production, silicon beats hot metal hands down. The supreme flexibility of a computer DTP system has to be experienced to be believed.

And that is as far as I'm prepared to go. You'll just have to spend a few nights in the library, reading the relevant studies and papers and formulate your own answers – have fun!

We've got nice paper!

It has been in my mind for some time to write and congratulate you and your staff on producing a continually improving magazine. It was only when I picked up the December issue today that I decided to do something about it.

I don't intend to go on at length, merely to stress that having bought or subscribed to just about all the Amiga magazines available in this country and America over the years, I consider that you are worthy of the number one position. Both the new layout and quality of paper are impressive indeed! Long may you flourish.

R C Medford, Cheshire.

Thank you Mother...

Upgrade path

Has anyone stopped to consider how many Amigas there seem to be now (forgetting the excellent CDTV for a moment)? Apart from Commodore's own A500, A1000, A2000, B2000, three A3000s and an A3000-UX, there are also three other boards and peripherals that claim to be Amigas. These are Checkmate's A1500, GVP's A3000 and the new A5000 from SSL. That makes 11 configurations in total. With that kind of choice, how can the Amiga fail to succeed?

The answer is that it can! The only machine that is supported is the A500, usually with .5Mb of RAM as well, which is a very primitive machine when compared with VGA PCs. Of course, machines like the A3000, A3001 and A5000 are vastly superior to the PC but the A3000 is vastly over-priced and the A3001 and A5000 will probably not be supported.

In the case of the A5000, it is claimed that your Amiga will run six times faster. How many programs can you think of that need that kind of speed? Spreadsheets, databases, DTP, art and animation programs maybe. But what about games? Would you really want Xenon II or F-29 Retaliator to be six times faster? They'd be completely unplayable, as would most other games.

Now I'm not saying that the faster machines can't have better games, look at 20MHz VGA PCs for instance. 256 colours on screen which really make the processor work for its money while still keeping a lively speed.

The point that I'm really trying to get at in this letter is that there is no clear upgrade path for the Amiga after the A500. The B2000 is, after all, exactly the same in performance, while the A3000 is too expensive for all but the serious user. Cards like the A3001 and A5000 are all very well, but since they are third party, will

probably not be supported. After all, can you see Ocean bringing out a conversion of an arcade game that uses the boards allowing a game to be indistinguishable from the original in HAM mode?

What Commodore needs to produce is a machine that replaces the B2000 but still offers a cheapish machine (£600 extra) upgrade for A500 owners. This machine needs to be 32-bit, with a 20MHz 68020 and the ability to put in maths co-processor later. It should have a 1Mb of super-fast RAM as standard, upgradable to 4Mb and a separate keyboard and processor with lots of connectors.

Sounds impossible? What I've just described is a combination of an A1500 and an A5000 costing about £730 together. Obviously, they don't cost that much to make so why can't Commodore put all that in a package for around £1,000 and call it the A2500?

And while the company is about it, two more sound channels wouldn't go amiss. This new graphics mode could be introduced into a new baby Amiga as well (the fabled B500?), thus allowing full software compatibility. As it is, I can only see a machine like this being considered as a games machine in the future and never as an entertaining and serious one like the PC.

Jason Glover, Basingstoke, Hampshire.

Surely the point is that anyone laying out megabucks for one of the top-end machines or upgrades does so because they have a pressing need for a computer offering immense power? No one who simply wants to play games is going to bother to spend cash on a heap of power they don't need, right?

Software houses have to appeal to the lowest common denominator so that they don't exclude anyone.

What do the rest of you think? How many of you bought upgrades or powerful machines in the hope that software houses would convert their games to incorporate better resolutions, a larger memory quotient and so on?

Any takers?

I have just acquired my City and Guilds certificate in applications programming, receiving two distinctions and two credits so if anyone is looking for a trainee computer programmer in or around London, would they please contact me? Thanks for the plug. (No problem. Good luck! – Ed). And now for some questions.

1. The Pagesetter II demo is great and I am considering buying it. My deciding factor however, will depend on the form of protection employed. Does it use a dongle?

When I first had a Commodore 128, I had more dongles than sockets and if I lost one, my software became worthless.

2. Is there an analogue joystick available that will serve as a direct replacement for the Amiga mouse?

3. Do you think you could set a programming problem each month? The emphasis would be on technique rather than volumes of code.

4. In your recent questionnaire you asked about how many other people read one copy of Amiga Computing. If someone else reads my copy of Amiga Computing, that's piracy isn't it?

Mark Ford, 22 Farley Hill, Luton, Beds LU1 5HQ.

Gold Disk has – sensibly – decided not to copy protect Pagesetter. The result is that you can make a backup without problems. An analogue joystick to replace the mouse? Not as far as we know.

We could set programming problems, what do the rest of you think? If you want a programming problem write and tell us.

The question about other readers was an attempt to determine how many people we reach, not how many more we could sell to. Not everyone can afford to buy a magazine, we understand that, and welcome those who must resort to reading someone else's copy.

Short sighted?

I was just reading the November issue and thinking how much I like Amiga Computing, the news, reviews and of course the letters page. In fact, I have recommended your magazine to several new Amiga users (jolly decent of you! – Ed). This time I happened upon a very strange thing. One of your adverts is actually for Atari ST software! In the same advert, in brackets and very small print is written 'Amiga and PC also available'.

Not only does this rub salt into the wounds as a dedicated Amiga user, but as I recommend your magazine as the best Amiga-only magazine very often, it also doesn't do a lot for your credibility or mine come to that!

The advert is on page 80 but your advertisers' index states that it is on page 68 - another boob?

The question is, does anybody actually proof read your magazine? If so, when does s/he get his/her new glasses? If you require somebody to check the adverts etc., I willingly volunteer my service (perhaps in return for some blank cheques...).

Graham D Morecroft, North Yorkshire.

Ho hum, that old chestnut. Many advertisers cater to both the Amiga and ST markets and consequently, run one advert in both ST and Amiga mags. Unfortunately, the particular advertiser you're talking about has given more emphasis to the ST side of the biz. In fact, the company also offers a corking service for Amiga owners too.

We've got a proof reader. Problem is, the only glasses he's familiar with are cylindrical and have foaming, creamy heads on them - oh well...

Down with games!

Congratulations! I'm glad to see someone exercising that grey matter between their ears (I won't use the term 'lug holes' as this is an up-market magazine...). What am I talking about? This is the first magazine that I've read that has not printed its questionnaire to be cut out and returned on the back page of the magazine.

I'd say this is the top Amiga magazine out at the moment. It's not full of rubbish on games and you don't need a dictionary to read it.

Talking about games, I think I'll have a dig at them. Picture this. You are built like a brick wall, someone you know has been kidnapped or the world has been taken over by the evil Lord Shoutalot (I was tempted to say 'that git Harris', my form master, but I won't because I'm such a nice person). Anyway, you have to walk from A to B to complete the game, kicking and hitting everything that moves. Every now and again, some bloke about ten feet tall will come along and guess what? You have to hit him.

That has just about summed up 99.9 per cent of all games. A demented peanut that's brain dead could complete this...(edited here to save the terminally bored...Ed)

Chris Webb, Southampton.

Yeah, yeah – if only you could spell as well as you can play games, right? Perhaps you ought to pay a little more attention to *Mr* Harris and stop worrying about Amiga owners who like to play the occasional game.

Copyrights

Could you please help me on a matter of the copyright of files which appear on your coverdisks?

The query I have is with reference to the piece of music entitled Marilyn by Steve Cooper. Am I allowed to use this or other pieces of music in my own programs, as long as I make no financial gain from them?

The author of the piece will get a credit in the program as will Amiga Computing. The program would then be released into the public domain.

As I presume the disks on the front of your magazine are already public domain (I have seen them for sale in various public domain libraries for instance), I see no problem in using files from them in non-commercial programs, but could you please confirm this point?

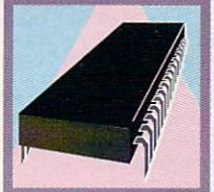
Matthew Norman, Warley, West Midlands.

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amiga almanac

This month, Jolyon reveals the secrets of Soundtracker and gives you the best (and worst) from the world of assemblers . . .



Machine Code

Assemblers Look out for:

1. Integrated Environment. Some assemblers only operate from the CLI. That means you'll have to execute several (long-winded) commands to edit a file, assemble it, link it and test it. In an integrated environment all this is looked after for you (although they should also allow you to use it via the CLI if you really have to). You run the editor and menu options allow you to assemble the current code and test it without having to leave the editor. This saves an awful lot of time.

2. Macros. Almost all assemblers have macro support. Macros are not 68000 instructions, but a sort of language to make writing your source code easier. Here is an example:

```
REPT 250
move.l (a0)+,(a1)+
ENDR
```

This would give the same results on assembly as 250 lines of MOVE.L (a0)+,(a1)+. It's important to realise that this isn't a 68000 loop, but merely an instruction to the assembler to assemble the following line 250 times.

3. Speed. OK, speed isn't that important, but if you've got 200K of source code, would you rather wait half an hour or 30 seconds for it to assemble?

4. Compatibility. Most good assemblers are compatible with the original Metacomco Assembler at least to some extent. This is useful as most public domain source codes are in this format. HiSoft Devpac 2 £59.95 is one of the oldest assemblers around and there are versions for many computers.

It's a comprehensive package, containing an assembler, integrated editor, monitor and linker and contains everything you need to start programming in 68000, including a little 68000 reference book.

Compatible with Metacomco, HiSoft is probably the most widely-used Amiga assembler around. Make sure you get the latest version (2.15).

Argonaut ArgAsm is a god assembler and costs £59.95. Argonaut, the people who brought you Starglider and Starglider II, got fed up with using slow assemblers on their Amigas, so they set out to write the fastest assembler yet on the Amiga. It beats Devpac (the next fastest) for speed by about 6:1. It also includes an integrated editor, but no monitor. It's memory-hungry. Don't expect to use it without at least 2Mb of memory for all but the simplest programs. If you have a machine with plenty of memory and a hard disk, this is the assembler to go for, I use it for most of my work.

Kuma K-Seka 68000 is another old assembler which unfortunately, it hasn't been updated for quite a while, and it shows. The editor makes AmigaDOS's Ed look professional. It's not compatible with Metacomco Assembler, and won't allow you to assemble a file with more than one section. Best advice is to avoid it.

Oxxi AssemPro has the nicest looking user interface of the bunch, with separate windows for Editor, debugger, assembler and on-line reference, however the editor saves files out in a non-standard format and is not compatible with Metacomco. It's not terribly fast either.

A68K is a public domain which is the only freebie assembler in this line-up. It's a very basic affair, similar in operation to the original Metacomco Assembler. If you want a cheap way into learning assembler, this is a good place to start, but it's difficult to use and will probably put you off coding for life.

There are some places doing cheap copies of the original Devpac version 1 (you can usually pick it up for about £10). This is a much better product, although not as good as the latest version.

Monitors

When your code fails and you can't work out why, you have two choices. Either sit back with the source code and think through the whole process very carefully (the best way), or load up a monitor and go bug hunting (the quick way).

HiSoft Monam 2, part of the Devpac 2 package. This is an excellent debugger. It's a symbolic debugger, if you assemble a program with the Debug Info option set to ON, it will add a symbol hunk to your file, which basically means when you load it into the debugger, instead of getting loads of instructions and strange hex values, you get all your original labels displayed in the disassembly. This really makes debugging easy.

The Amiga Mon, also called Rossi Mon after its author Timo Rossi, is a fully featured monitor from the public domain, allowing you to load files, single step, and disassemble, save blocks of memory, load and save raw disk tracks, search memory and so on. In fact every time I load it there seems to be another feature I overlooked.

This monitor doesn't support symbol hunks, however, but we are promised this for a future release. What other software do you need? If you want to compact your files (not a bad idea if you're short of disk space) you need PowerPacker and Titanics Cruncher.

Picture conversion

Need to convert IFF graphics or fonts into easy-to-use format files? Ask for IFF Converter and Font-2-Raw. All this and more should be available from your local public domain merchant.

Soundtracker. You either love it, or you hate it. This non-standard, non-approved, non-legal music program suffers from many faults, but it's ease of use has won out and made it (and it's derivatives Noisetracker & Protracker) the most popular Amiga music package around.

Unfortunately, from a programmer's point of view, there is no official documentation of the file formats, so if you wanted to use a tune in your program, you would have to use one of the widely-spread and badly-written hacker's replay routines.

Now, for the first time ever, I can reveal the Soundtracker file format for everyone to use themselves. All recent soundtrackers save out using the module format. This is a filename with a MOD. prefix, containing the song data and the instrument samples combined into one file. The older versions of Soundtracker only supported 15 instruments:

NAME BLOCK: Offset Size Description $0000 20 bytes ASCII Module title

INSTRUMENT BLOCK: Offset Size Description $0014 15 x 30 bytes Instrument Data

Instrument block, starting at offset $0014 contains 15 instruments, each 30 bytes long, the instruments have the following format:

22 bytes ASCII
Instrument name 1 word
Sample length *IN WORDS* 1 word
Sample volume, 0 to 64 1 word
Repeat start position *IN WORDS* 1 word
Repeat length *IN WORDS*, 1=no repeat

SONG BLOCK: Offset Size Description $01D6 1 byte Number of patterns $01D7 1 byte Set to 120. Not used $01D8 128 bytes

Pattern play order list. 1 byte per pattern, max 200 $0258 1024 bytes*number of patterns

Each pattern is made up of 64 rows. Each row consists of 4 longwords (1 for each channel) of the following format:

* $00 1 word period value of note $02 1 word control word.

The control word contains information on which instrument is being played, along with special effects such as volume slide. Format for this word is: **$xyzz**, where x is the instrument number (0 to 15), y is the effect (Set Volume is $C) and Z is the value for this effect.

SAMPLE BLOCK: This follows immediately after the song data, and contains the 8-bit sample dumps for the instruments 0 to 15 in order.FALSE);

Code Clinic

To the dying echoes of Auld Lang Syne, here's Holmes. This month he's on about music and why the amiga's so good at making it

The Amiga makes and stores its musical files in a format known as SMUS. Every file has at least two chunk types SHDR and TRAK. SHDR is very simple. Take a look at this

53484452 00000004 3E807F02
SHDR...

In the format used by last month's IFF analyse program, it comes out as

SHDR { ;size=4
tempo 16000
volume 127
tracks 2
}

The tempo is 16000 128ths of a quarter note per minute! This is 125 beats per minute in common parlance. Volume is 0 - 127, so this piece is to be played back at full volume. Finally, there are two tracks Current Amigas will play up to four at once, but the standard lets you have as many as you want, so when you get an A9000 with 2 gigabytes and 20Gb floppy, you might be able to do a whole orchestra. Good programming note - make your programs ALLOW for future developments.

Each track contains a sequence of 16-bit 'events'. An event can be a note, a rest, a time signature or one of a few other things, as we'll see later.

Each event is coded by two bytes - the first 'sID' tells you the type of event, the second 'data' depends upon the event type.

0-127	A number in this range means a note. 0 is the lowest.
128	This codes for a rest, or pause.
129	Select an instrument.
130	Set time signature.
131	Set key signature.
132	Set (or alter) volume for this track.
133	Set MIDI channel.
134	Set MIDI preset.
135	Set clef. Data=0 for tre ble, 1 for bass, 2 for alto, 3 for tenor.
136	Change the tempo.
137-143	Unused.
144-159	Reserved for 'Instant Music' package. If you have this package, refer to its documenta tion. If not ignore these values.
160-254	Reserved.
255	End-mark. You won't find these in disk files, but some programs use them in RAM to mark the end of track.

Events 0-11 denote C, C#, D, D#, E, F, F#, G, G#, A, A#, and B in the lowest octave, known (strangely) as -1 or ' '. 12-23 denote C, C#,.....B in octave 0, and so on up to 127, which is in octave 9. Most packages, such as Sonix, use octaves 2-7. If you want to know the frequencies, A1 is a rumbling 55Hz, A4 is a lovely 440Hz, and A7 a squeaky-clean 3520Hz.

The data part of a note, or rest, is split into 5 bit fields. Bit 7 is set if the note is chorded, ie, played simultaneously with the following note, clear if not. Bit 6 is set if the note is tied with the next one. If so the two notes should be played as one note of the combined length. Bits 5-4 code for n-tuplets: 00=normal, 01=triplet, 10=quintuplet, 11=septuplet. An elementary music textbook will tell you what tuplets are if you're not sure. Bit 3 is set if the note is dotted, ie half as long as it would otherwise be. Finally, bits 2-0 give the division:

000 = whole note (semibreve)
001 = half note (minim)
010 = quarter note (crochet)
011 = eighth note (quaver)
100 = sixteenth note (semi-quaver)
111 = a 128th note, too short to be used at all often.

At this point, let's break for a little exercise. Run last month's IFFanalyse program on a music file from say Sonix, or Deluxe Music. Type **'IFFanalyse FurElise'** at the CLI, or **'IFFanalyse > prt: FurElise'** if you want a hard copy. Also, get a hex listing of the file enter **'type > prt: FurElise opt h'.** See if you can identify the different durations of notes in the TRAK chunks. You will notice that tied notes chorded notes, and tuplets appear quite infrequently, if indeed at all.

Time signatures have two bit fields in the data byte. Bits 7-3 give the 'numerator-1', ie 00000-11111 codes for a numerator of 1-32. Bits 2-0 give the 'denominator', ie 000 means whole notes, 001 for half notes, up to 111 for 128th notes. Confused? Here's an example:

hex: 8212

Well, hex 82 is decimal 132, so this is a time signature. Hex 12 is binary 00110010, so the first field is 00010, and the second is 010. Therefore, the numerator is (00010 + 1) or 3; the denominator is 010, which means quarter notes; we have three quarter notes to the bar, or 3/4 time. Anyone for the next waltz?

Key signatures have a data byte from 0-14. 0-7 is a number of sharps, so assuming major scales, 0=C, 1=G, 2=D, 3=A, 4=E, 5=B, 6=F#, and 7=C#. Codes 8-14 for 1-7 flats, so 8=F, 9=Bb, 10=Eb, 11=Ab, 12=Db, 13=Gb, and 14=Cb.

I remember some of these by the mnemonics - for sharps 'Charlie goes down and cats breakfast', and flats 'For breakfast 'e 'ad damn good cornflakes.'

That's the hard bit over. Set volume has a data byte of 0-127, just like the volume code in SHDR. Use this to alter the volume of a track while it is playing. Codes 133 & 134 are for MIDI use, outside the scope of this article. Code 136 lets you change the tempo of a track part-way through. It's NOT like the tempo field in SHDR - it gives the tempo as quarter notes per minute because it only has eight bits available. If you use this code, be careful to change the tempo of all the tracks at the same time; if you don't you will get horribly out of step.

Tunes will almost always contain 'INS1' chunks as well. These give the names of instruments used in the tune, and the register numbers to be associated with them, so that instrument events in TRAK chunks can refer to them by name. Here's one:

494E5331 0000000E 00000000
5069616E INS1.........Pian
6F2E3853 5658
o.8SVX

This means 'load in the instrument called Piano.8SVX, and refer to it from now on as instrument 0' - remember from last month that an instrument will probably be an 8SVX file.

You could also find chunks like 'NAME', 'AUTH' and 'ANNO' in a SMUS file These are just like the ones we saw in 8SVX files last month.

Finally, you may find other types of chunk in the file; these are NON-STANDARD chunk types - see Code Clinics Oct & Nov 1990. They are quite legal, provided they conform to IFF-85 syntax. If your program finds any that it doesn't understand, it should ignore them. Alternatively, check the manual to see what they mean, and if nothing is revealed, contact the the people, who published the package, and ask them for the specification of any chunks they seem to have invented. You may have to pester them, but that serves them right for not putting the information in the manual.

Next month's Code Clinic is the last for the time being on IFF, it's all about ILBM picture files, and how to read and display them.

Music

Whether you're a Strauss with Sonix or a Mozart with Master Tracks, this is the column for you. Jason Holborn conducts . . .

After years of blinkered marketing, Commodore finally seem to be exploiting the Amiga's potential as a tool for the serious musician. But the question on everyone's lips is still "where's the official Amiga music bundle?" We've seen games bundles, graphics bundles, educational bundles, but still no music bundle has arrived.

Commodore US has been successfully pushing its music bundle (an Amiga 2000, 1084 monitor, Dr.T's KCS and two synth patch editors) for a fair old time now, but still Commodore UK seems unable to come up with a suitable package.

The marketing brains at Commodore UK had been secretly negotiating with both Microlllusions and Dr.T in an attempt to tie up a deal to bundle either Music-X or KCS Level 2 with the Amiga. Eventually Commodore managed to clinch a deal with Microlllusions. The company was contracted to supply Commodore with a larger number of copies of Music-X for inclusion within its planned bundle.

Although the deal seemingly went through fine, Commodore eventually changed its mind and decided to dump its massive stocks of Music-X onto third party vendors at a vastly reduced price (which explains why Music-X can be bought so cheaply).

At the Frankfurt Music Fair held earlier this year, Commodore Germany showed off its new Funlab bundle. The pack contained a Kawai MIDI keyboard, a five-track Steinberg sequencer (Pro-5 perhaps?) and an Amiga 500.

Since then, however, we've heard little of this bundle, but it would seem logical that if it was eventually released, it may well end up on this side of the English channel.

In the meantime, Roland has already jumped on the bandwagon with their £470 Desktop Music System. Although this doesn't include an Amiga, the pack does contain Dr.T's excellent Tiger Cub Sequencer, Copyist Apprentice and Roland's own CM-32L LA sound module. If you're after a one-stop music pack, but can't be bothered to wait for Commodore to come up with the goods, then Roland's pack may well be worth investigating.

Next month I'll be taking a look at the Roland music pack, so stay tuned (no pun intended) for that one. Meanwhile, Roland is on 081 568 4578.

ON THE RIGHT TRACK

Written by the infamous Fairlight team, Star Trekker is a new arrival that could well oust Sound Tracker from its throne. Unlike most of the competition, it uses the same proven user interface of Sound Tracker (even to the extent of using the same bass relief graphics), but adds a few tricks of its own.

After just a few minutes of playing, you'll soon realise that Star Trekker is something pretty special - feature for feature, even the Software Business' TFMX (reviewed in the November issue) would be hard pushed to match it!

For starters, Star Trekker doesn't just include all the usual Sound Tracker song creation tools, there's also a vast range of extra tools included as well.

For those of you with audio digitisers, Star Trekker provides complete sample grabbing and editing options. There's also a preset editor built-in, so you don't have to mess around with ST-nn disks - just load in any sample and build up your own preset lists.

Most importantly though, Star Trekker is fully MIDI compatible. Previously, about the only Sound Tracker-like program that supported MIDI was Andreas Tadix's Game Music Creator, but that had a disturbing habit of crashing with some (most) keyboards.

Star Trekker supports both recording and even playing though MIDI, making it possible to create tunes that take full advantage of your MIDI-setup.

The only negative aspect of this is that it still only supports four note polyphony - so even if you have something flash like an SY77 or an M1 you can still only play four notes at once.

Gripes aside, Star Trekker is most definitely the best Sound Tracker program available. For just £3, you can own a music composition system that simply blows away commercial offerings such as Quartet and TFMX. Buy it now!

Star Trekker is available from Seventeen Bit Software on 0924 366982. Also, look out for a round up of PD Music software in a future issue.

MUSIC-X JUNIOR – £80

The Software Business (0480 496497)

After over a year of painful waiting, Microlllusions' Music-X Junior has arrived. You may have read reviews of Junior in other publications, but be sure that we're reviewing the official release - and not just another pre-production back-hander.

Music-X Junior looks and feels almost identical in operation to its big brother. There's the same 250 tracks of real-time MIDI recording (albeit a few recording options such as punch in/punch out etc). Gone are the complicated syncing options such as SMPTE, but who needs 'em anyway? After all, the nearest most of us come to a 24-track tape machine is the trusty domestic hi-fi.

Junior can still record a full sixteen MIDI channels of MIDI data simultaneously. These can then be extracted and placed into their own private tracks (don't worry, there's plenty to go round!). If like me you use a music work-station such as the Korg M1, then this is a great way of dumping performances straight from your keyboard sequencer into the Amiga.

Editing power has always been a strong point of Music-X, and Junior shares much of this power. Music-X offered two sequence editors (the stream-based Event Editor and the graphics-based Bar Editor), but Junior offers only one. Thankfully the best of the two - the Bar Editor - has been retained. Notes are represented as lines of different lengths (the longer the duration of the note, the longer the line).

Also, events such as pitch bend and note velocity can also be displayed in a graphic format. All sorts of events can be edited simply by clicking on them with the mouse when the proper editing mode is selected.

Entirely new sequences can be built up from scratch simply by drawing them in with the mouse. Alternatively, you can even record straight into the bar editor with a MIDI keyboard.

Just to keep you on the edge of your seat, and maybe also to ensure that you continue to buy *Amiga Computing*, more details of this package will be printed next month.

EXPRESS YOURSELF!

Music is all about extremes. In our round up of sound samplers in the November issue of Amiga Computing, I was lucky enough to be able to review RAMScan's Audio Engineer, a very powerful sampler from Australia that would leave you with little change from £200. At the other end of the pricing spectrum, Harlequin Distribution have just released their Sound Express system that is perhaps a little easier on the pocket - £160 easier, to be precise.

Samplers can be jolly tricky things to suss out, but Harlequin's unit is definitely designed with the beginner in mind. Everything is layed out in a clear and concise manner, making Sound Express an absolute doddle to use. There's the usual cut, copy and paste operations, plus a unique real time effects section which can add effects such as echo, reverb, hall, room, phaser and church to any incoming sound signal. The sound quality is hardly ear shattering stuff, but - as the old saying goes - you gets what you pays for. Personally, I'd rather go for Microdeal's Master Sound (which is the same price!). Anyway, if you're after a sampler which requires very few brain cells to operate, then Sound Express could be the one for you.





ADVERTISERS' INDEX



This month, Eddie Mckendrie provides a comprehensive tour of BT's popular interactive service Micronet...

Imagine a bulletin board that is only a local number away and has callers spread out as far a field as a small croft on the isle of Skye, and an even smaller bedsit in central London.

Throw in a good measure of Teletext-style graphics and you've pretty much summed up British Telecom's Micronet. This is a country wide Videotex service which aims to provide information and entertainment for the growing number of computer users who have access to a modem.

During Micronet's early days, it was dominated by the propeller-head elite, but these days, it's a very different story. The price of modems drops daily. But listen hard and you can still hear the muffled rustling of anorak hoods coming from keyboards up and down the country.

The Net - as the psueds call it - is basically, a huge collection of Teletext-style frames. At the last count, there were more than 30,000 pages, containing information on various topics from home computing to satellite TV.

The database is divided up into a series of mini-magazines which focus on a specific area of interest. By keying in a frame number (which can sometimes be enormous!) you're presented with the relevant information.

The service is extremely well structured and it's possible to glean the information you want without ever keying a frame number directly. Instead, single or double digit selections can be made from intermediate menus which flow down different arteries and veins of the network. This is by and large, fine as long as you are not in a hurry!

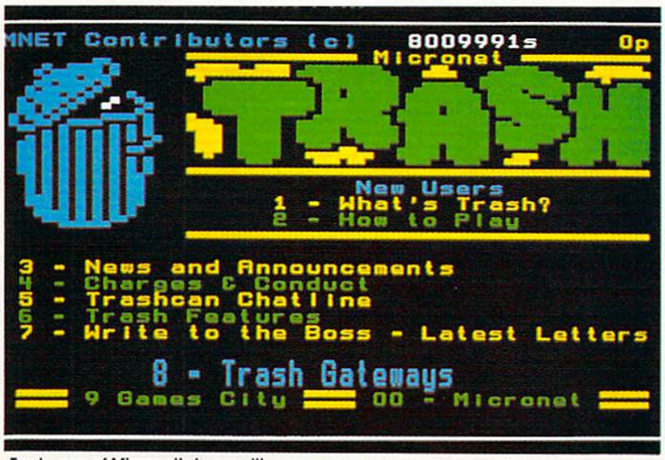
The built-in 'keyword' facility provides a more friendly way to get to the most commonly accessed areas. For example, typing *AMIGA# while on-line takes you directly to the Commodore area of the Net.

But what about the quality of the information? There's no point in getting to your frame to find it is out of date or irrelevant. Fortunately, most Micronet areas are well run, a large number of topics are updated daily with others typically being updated twice a week.

The information comes from a variety of sources. Micronet has a core editorial team which provides the main news and computer magazines, while external contributors provide news and features on special interest topics like hi-fi, music and television.

There's even a special open access section of the database called 'Gallery' which allows members to provide editorial on any topic they fancy. OK, so what makes MIcronet different from Ceefax or Oracle? That can be defined in a word – interactivity.

Teletext now boasts an audience of 7 million readers, but have you tried to chat to one of them without getting out of your comfy chair? Unlike Teletext, in order to use Videotex you must be physically linked to a central computer system. This has obvious pros and cons. On the up-side your two way link means the system knows exactly who you are. Every Micronet member has a unique personal 'Mailbox' number, rather like a 'phone number, which other members can use to get in touch individually. Most of the main Micronet areas also have letters pages which are frequently updated, allowing members to openly air opinions or waffle on about the latest burning issues. Now this is where it gets tricky. Comms is a funny old business, enthusiasts seem to hook their micros up to a board and then converse with other people who've done the same, about things of mutual interest. This usually results in lots of very boring conversations about baud rates and how much better the ST is over the Cray for MIDI sequencing, letters praising the Amiga to the ST area on-line and so on.



Trash, one of Micronet's two multi-user games

Most bulletin boards have a range of software which can be downloaded. Micronet is no exception, but the system it uses is unique. Telesoftware is regularly updated with public domain and shareware programs for most formats of machine, including the Amiga. Although this should not be confused with the Telesoftware service Ceefax operated, it does work on the same principle.

Unlike most other boards, you cannot upload software to Micronet (although they do welcome contributions by post). If meeting people for a chat is more your cup of tea, then it's probably worth taking a trip to Micronet's very own on-line hotel – Dialtalk. Sixty four people can link up and exchange news interactively.

Dialtalk is different to the letters areas because it's a real-time environment. Other people using the service see what you're saying as you type it, just as you can see their input.

If you've called a BBs and chatted to the Sysop you'll already have a feel for how the system works. Dialtalk is divided up into a series of rooms, laid out loosely like a typical hotel. Upon arrival, you'll be in the Dialtalk Foyer. This is where most of the regular users stand and chat. There's also a bar and some private rooms which anyone can use should the need arise for more personal conversation.

Multi-user games form an essential part of the Micronet package. These are best described as text adventure games played with, and against, other real people rather than just your Amiga. Currently, there are two such games on Micronet. Shades is a medieval fantasy adventure and Trash is a futuristic labyrinth of puzzles.

There will be much more on these and other non-Micronet multi-user user games next month. Joining Micronet also gives you access to Prestel, the massive 300,000 frame database of which the Net is only a small part.

The bulk of Prestel's information is provided by newspapers, travel agents, educational institutes, banks, companies and of course, British Telecom. You probably won't use Prestel much, but when you do, it can be very handy for booking holidays, theatre tickets or sending flowers. The most useful part of the main Prestel service is Phonebase, a direct link to the national directory enquiries system - ideal if you want to avoid the hefty new charges for dialling 192 from April.

The most obvious drawback of using an interactive on-line service has to be the cost. In order to take advantage of Micronet you have year. There is also a time-based charge for use of the service of 1p a minute off peak and 7p a minute during the day.

The charge is waived between midnight and 8am (handy if you can't sleep because of the phone bill). Premium services like Dialtalk, Shades and Trash cost yet more with 2p a minute being the rate during off-peak hours. Add to this the cost of your phone call and your bank manager might not be as keen on Micronet as you are.

If you have a modem and viewdata comms software, call the Micronet demo. Set your modem to 7E1 (7 data bits, even parity, 1 stop bit), dial 0272 250000. Use the customer ID: 4444444444 and the password 4444.

How do you get stunning artwork into your DTP creations? Jason Titchberry explains...

Whatever form of publishing you are into you're bound to run across the artwork problem sooner or later. Problem? Well, it's like this...

Suppose you were compiling copy for the latest edition of your rave hit 'Guernsey Sweaters Monthly'. Someone's submitted an interesting pattern but the trouble is, they've put it on a sheet of A4 paper. How on Earth do you include it in the mag?

Actually, there are several ways. If you have a digitiser or a scanner then you can grab an image of the diagram. Of course, this means the relative expense of a camera or a scanner but there you go.

The other options all involve you drawing it, either by copying it directly or using a graphics tablet to trace over the image. The Summa graphics tablet is very good and not too expensive if you like tinkering with art packages.

But the problem isn't over yet. You still have to get the image into the DTP package. Think yourself lucky that you own an Amiga and not a PC is all I can say.

The Amiga IFF system is almost unique in that it is a standard which people actually adhere to. I can't think of any package on the Amiga capable of exporting graphics which doesn't use the standard IFF format for bit-mapped graphics.

On other systems you'd have to contend with file types like TARGA, PICT, PCX, GIF, IMG, TIFF (two types), DEGAS and NEO.

Handling all these image types on lesser DTP systems is an expensive business as many publishing houses have found out. It's not enough to ignore these files though – you may need to use them yourself.

Without a scanner or digitiser there are only two sources of artwork for your publication – images drawn by yourself or those drawn by someone else. Clip art, as the latter is known, is very handy for spot illustrations to brighten up pages.

There is a surprising variety of clip art and much of it is public domain, so it will only cost you the price of a disk and copying. Unfortunately, a lot of it has been produced with the Mac in mind so you'll find that you'll have to have to deal with all these alien file formats after all.

Pagestream2 comes with a lot of import drivers allowing you to decode some of these stranger files although I have good reason to question some of its Pro Draw conversions. If you have Pagesetter or Pro Page, then you'll have to rely on a third-party solution.

At the moment, ASDG's The Art Department is a good option, providing many different drivers for handling file types such as TIFF and GIF, but If you buy the professional version, you may have to pay extra for other file types.

A package like TAD or Pixmate is a very useful addition to your DTP tool-chest, not only for changing between file types but for subjecting your artwork to palette changes, colour compactions, Ham to 64 conversions and for subjecting them to weird filters and effects.

It's quite easy to end up with a piece of artwork that bears little resemblance to the original.

TAD will also handle 24-bit IFFs, which is more than Dpaint and the like can do, so it may be your only option for editing ray-traced images for example. Remember that these images require a lot of RAM – at least 1Mb before you consider running TAD and preferably two or three before you can use it seriously.

It is a good idea to tinker with your graphics before loading them into a DTP package. Invariably the screen refresh takes so long during page layout that it is worth your while cropping the image exactly as you want it first.

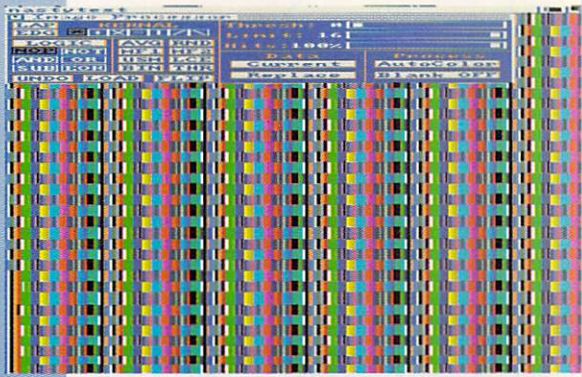
With all this to consider it's small wonder that a lot of magazines have as many staff handling the artwork as they do handling the words. Still, it was your idea to become a one-man Wapping wasn't it?



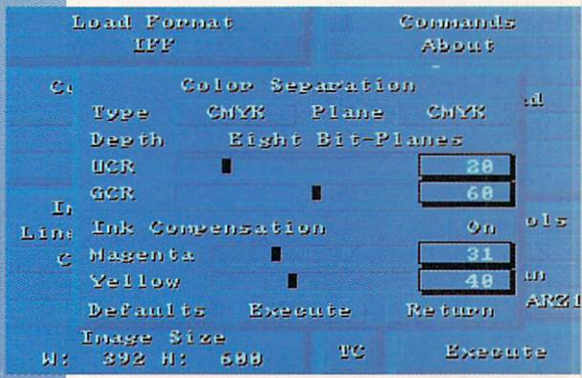
Bitmap graphic imported into Pagesetter II. Note that this is only a screen preview and bears only a passing resemblance to the actual output



An example piece of artwork supplied with Pagestream. Again, this is only a screen preview



Pixmate allows many wonderful image processes as well as the normal palette stuff



The Art Department – worth its weight in gold

Registers, keyboard scancodes and controlling a joystick, it's all here

Amos

Have I got news for you.... AMOS has been reincarnated yet again, this time boasting the ability to run from any folder. Mandarin say that this is not the only change from version 1.2 but offers significant improvements for owners of hard drives who previously had to run AMOS from the root directory of a partition – messy!.

The other major improvement of V1.21 is the introduction of an improved music extension and SoundTracker converter. To get hold of the new update contact Sandra Sharkey at the Official AMOS PD Library on 0942 495261. If you've just updated to version 1.2, Sandra says she will update your disk with 1.21 if you return your PD updater disk together with 50p to cover P&P. Sandra would like to stress that this offer is only open to those people who obtained the original update from her, not those who got a rather cut down version on another magazine's coverdisk.

Also everybody who buys AMOS should now get luvverly ring-bound manuals instead of the perfect bound ones that you and I got. This is due to general demand for a manual which can lay flat on your desk. Congrats to everybody at Mandarin Software, it's nice to find a company who listen to the end user. This issue should reach you just before the Computer Shopper Show, if you are going pop along to the Mandarin stand. All the gang should be there including Chris Payne, Richard Vanner, Aaron Fothergill, Sandra Sharkey and of course me. See ya there.

Infinite wisdom?

OK then, register time. In his infinite wisdom Francois Lionet decided to implement a series of data registers that AMAL can use in the same way as a normal variable is used in AMOS itself. He also created a special series of registers RA-RZ which can be used to communicate with the BASIC part of your program. These are known as `external' registers, and now you know what they are it's time to use them. The first thing to do is to sort out the AMOS Data Disk which we have been using over the past few months, stick that in the drive and type the following into the editor.

```
Flash Off : Curs Off : Cls 0 : Double Buffer : Get Sprite Palette: LOAD "AMOS_DATA:MAGIC_FOREST/MFSPRITES.ABK"
```

OK, that sets up the initial screen, (remembering that AMOS automatically opens a default screen when any program is run) and loads in the SPRITES. Now we're going to define a simple AMAL string, remember to type this in exactly as it appears here 'cos otherwise you may get nasty errors cropping up.

```
A$="Begin: Let X=RA ; Let Y=RB ; Jump Begin ;"
```

Some of you will spot what I am doing in the string but I'll explain anyway. First I have set up a label called `Begin:' which will serve as the beginning of the program. Next, I use the special register `X', this is a special register whose only purpose in life is to control the X position of an object or screen. I then make `X' equal to the value in the external register RA and then do exactly the same with the special register `Y' (guess what that does!). After all that is finished, I jump back to the label we called `Begin:' and do it all over again. Just add these few lines and we will be ready to run the program.

```
Bob 1,50,50,1 Channel 1 To Bob 1
Amal 1,A$ Amal On Direct
```

OK, run the program. Oh gosh, where has the little geezer gone? Has our program worked? Well try typing this in direct mode

```
Amreg(0)=50 : Amreg(1)=50
```

As you will see our little guy has jumped to position 50,50 on the screen. You may now have realised the relationship between RA/RB and Amreg(0)/Amreg(1) - they are the same thing! As we put a new value into these registers the AMAL program we just wrote automatically passes the values in the X and Y coordinates of the BOB, amazing huh?

Right then this is all very nice but not too impressive is it? How about using the special `Y' register to control the movement of a screen?

```
Flash Off : Curs Off : Cls 0 : Paper 0
Centre At(,8)+"AMIGA COMPUTING AND AMOS" Centre At(,10)+"THE PERFECT COMBINATION!"
```

These couple of lines just display something for us to scroll around, the bit which does the real work is next, and once again please type it in exactly as it appears (AMAL does know the difference between upper/lower case characters)

```
A$=" Begin: If RA=1 Jump Upscroll ; If RA=2 Jump Downscroll ;"
A$=A$+"Jump Begin:"
A$=A$+"Upscroll: Let Y=Y-RB ; Let RA=0 ; Jump Begin ;"
A$=A$+"Downscroll: Let Y=Y+RB ; Let RA=0 ; Jump Begin ;"
```

This little AMAL program looks at the number contained in `RA', if it is one then the program will jump to the label `Upscroll'. After this the special register `Y' is decremented by the amount stored in the external register `RB' and `RA' is reset to 0.

Now we need to control what values are passed into `RA' and `RB', Amreg(0) and Amreg(1) as the BASIC part of the program knows them!.

```
Amreg(0)=5 Channel 1 To Screen Display 0 Amal 1,A$ Amal On Repeat TEMP$=Inkey $SCAN=Scancode: If Jup(1) Then Amreg(0)=1: If Jdown(1) Then Amreg(0)=2: if SCAN=>1 and SCAN<=9 then Amreg(1)=SCAN Until TEMP$=" "
```

This part of the program assigns an AMAL channel to screen 0, and goes into a loop. Every time the loop goes round AMOS reads the keyboard to find out if a key has been pressed. If a key is detected the character is passed into the variable TEMP$ and the scancode of the key is passed into the variable scan. Scancodes are numbers which don't represent the actual character which is pressed, rather they represent the actual position on the keyboard.

I'll go off on a bit of a tangent for a few words and give you a few more strange facts about keyboard scancodes. A few people have phoned and written to Mandarin about a strange extra key that seems to appear on their screen when using the keyboard define. This strange key is actually part of the return key on British and American Amigas, but in other countries - France for example - it is an extra key with its own scancode (43 for those with an interest) and because AMOS is designed to be easily configured for non-English keyboards I had to include this extra key in the keyboard definer!

Getting back to the program, the numbers along the top of your keyboard one to nine, just happen to have the scancodes of one to nine so it is a simple task to put this value into Amreg(1) ('RB' in AMAL) in order to control the amount of lines the screen will scroll up when the joystick is used.

Incidently, I know I could have used the AMAL facilities to read values from the joystick but what about reading information from the keyboard? Why not try to alter the program so that pressing the up/down cursor keys does the same as moving the joystick up and down?

Anyway, try running the program. You will see a message printed in the middle of the screen telling you what is totally obvious, you can then push the Joystick up or down for a nice smooth scroll. Now try pushing the numbers one to nine and you will see the scroll slow down or speed up. Neat huh?

Well, that's about it for this month. I've got to get back to programming the very latest red hot AMOS demo which should, fingers crossed be available by the time you read this.

Computer cracking up? Printer all out of puff? We're here to help!

Write to Amiga Computing, Europa House, Adlington Park, Macclesfield SK10 4NP



Checked his Agnus...

The other day I decided to have a go at writing my own boot block with July's edition of the Code Clinic. First I checked my Agnus and found it was a standard PAL version. I then followed the instructions, tried the 60Hz boot block and re-booted. The disk still booted even though I don't have the fatter Agnus. Why?

Stuart Unsworth, Rochester

The answer is simple. The 60Hz boot block doesn't really mind if you don't have a fatter Agnus. It will happily pass over the code on the new boot block, as it is now redundant, and carry on with a normal boot. Oh, and for all you out there with A3000s (gimme! gimme!), please don't be alarmed if the Agnus check routine doesn't work on your machine – it has a bug which Jolyon will be rectifying in a later version of the program.

The colour of money?

I recently bought a Commodore MPS1550C printer in Bradford, England. Unfortunately, the colour ribbon has now run out and I find it impossible to get one. People in England tell me the printer is out of date. Would you confirm this for me, as I cannot afford to lose £250 after only a couple of weeks' use.

If the ribbons are not available I will have to bring the printer back over to Bradford.

Nael Nangle, Raheny, Dublin.

Your printer problems are over! The Commodore MPS1550C is indeed an elderly printer but is by no means out-dated. Silica Shop can supply a ribbon for £12.99 (carriage may be extra for overseas). Just phone 081 309 1111 and ask for part number RRB 3150.

Formatus Interruptus!

I have a problem with my Workbench. When I want to format a disk I click on the icon and choose initialise from the disk menu. But when I do this the computer only formats one cylinder and then it's over. I would like to know what the problem is. Is it a hardware problem or is it a software problem? I am thinking of taking my computer to a repair shop. What should I do?

Remco Andriese, Holland.

Don't, whatever you do, take the machine to a repair shop before trying the following relatively straightforward procedure. First, put the disk you want to format in the internal drive, then open a Shell by double-clicking on the Shell icon in the Workbench disk's window (the Shell is simply a souped-up version of CLI). Now type in this AmigaDOS command line:

FORMAT DRIVE DF0: NAME <any name will do> <RETURN>

A window should now appear showing the cylinders being formatted and, at the end of the process, your disk will be initialised. You can rename the disk if you like from Workbench, but ignore the 'initialise' option in the Disk Menu – it's useless.

Driven to distraction

Recently, I have bought a GVP hard disk for my A500 (GVP Impact 45MB). The drive has an additional 2MB of RAM However, on connecting the drive to the expansion slot of the Amiga I notice that I now have the expanded memory but it doesn't seem to recognise the hard drive.

The ASSIGN command provides me with all drives except DH0: and upon doing a DIR DH0: the Amiga requests me to 'insert volume DH0:'. Does this point towards a failure or am I doing something wrong? The drive was bought from Power Computing in the .K.

Ron Pieterson, Bankok, Thailand

DON'T PANIC! The drive is fine. The only problem is that you cannot just plug in devices such as hard drives and expect the Amiga to converse freely with them. What you have neglected to do, is make your Amiga aware of the drive's presence with the MOUNT command. This command forces the Amiga to examine the Mountlist in its DEVS directory for a description of the new device.

If an entry for your hard drive is inserted in the Mountlist this will ensure that the drive is recognised when you next boot up. Refer to the Enhancer Software Manual for further details and consult the information supplied with the drive. If there is none, or it is insufficient, those friendly people at Power Computing will put you straight if you call technical support (on 0234 52207) between 3pm and 5pm.

In CAMRA?

Realising I could no longer spend my spare time touring this area searching for real ale. Last year I splashed out on an Amiga 500 and all the peripherals I could afford before my lump sum disappeared.

I've bought several books allegedly for beginners but to date have been unable to make much progress. Most of the letters in your column appear to come from readers who slung their L-plates away long ago, but at the risk of seeming completely devoid of my marbles could you give the answer to the following queries?

When using Kindwords, unless I remember to use the gb setmap beforehand, I get the wrong apostrophe and if I do remember I cannot obtain all the symbols required for the A590 RAM test. Presumably there is a way to obtain either whichever setmap is used, but I cannot suss it out, and the set of 18 keys on the extreme right of the keyboard is also a mystery to me.

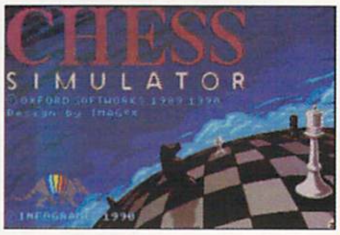
Also, having connected the A590 after much frustration and cussing I do not fancy the job of separating it from the A500 when I eventually get around to acquiring some more RAM. Is there any way of doing this

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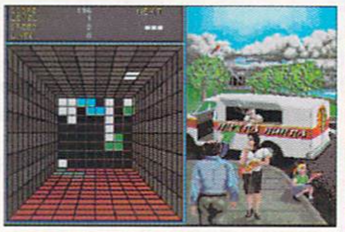
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without gaining access to the 501 already there?

Finally, could you tell me what causes a 'hard error' on a track surface and if there is any remedy. So far I have only found them on games when Disk-Doctoring a dodgy disk.

B Easter, London

First of all, were a little confused over your setmap problem. If you can't obtain all the characters you want from a single setmap, you will have to use SetMap from the Workbench system drawer. You can copy this over to the Kindwords disk if you like, and can access it by pushing Kindwords into the background with the toggle device in the top right -hand corner.

As usa1 is the standard Amiga keyboard setmap, were not surprised you can't complete the A590 RAM test with the gb setmap. Oh, and the 18 keys you refer to are those which make up the numeric keypad!

As to the A590 RAM upgrade, I'm afraid you'll have to go through the hassle of disconnecting the beast before slipping in the chips, as it's impossible to get to the chip sockets unless you do.

The hard error on your floppy is just that - a physical blemish on the disk which acts not unlike a crinkle in an audio tape. You might record something new over the corrupted piece of tape, but it's still going to sound lousy. The only thing you can do with disks like these is either throw them away or (if you're stingy/desperate) use them as backups for non-essential programs or data until you can get some new disks. Keep your disks covered and away from dusty places, and try not to spill coffee on your floppy drive if you want to avoid hard errors.

Virus? What virus?

I have read in the last issue of *Amiga Computing* about a virus on the magazine cover disk. I have disks June to November 1990 and would be pleased to know which are infected. As a newcomer to the Amiga (welcome aboard - Ed) I am worried and haven't used any of them yet.

(name unreadable) Leatherhead.

Take it easy! You got the wrong end of the stick. The letter concerning viruses on magazine disks had nothing at all to do with our cover disks - that story was about RAMPAGE, the defunct disk-based Amiga magazine whose publishers are now in liquidation.

There ISN'T a virus on ANY *Amiga Computing* cover disk. We check them thoroughly before dispatching them and take pains to ensure that they are positively antiseptic. Now that I've put your mind at rest, you might like to recall that your November cover disk contains VirusX 4.01, the latest version of possibly the best virus killer available, along with full instructions for its use. This ought to keep you safe from the viral heeby-jeebies.

Wot, no backup?

I am sure many people read this excellent magazine every month, and I am equally sure



that many more than you think are confused and baffled when they are faced with running some of the excellent utilities on the cover disk each month, or even PD disks from the CLI.

This brings me to my first cry for help. Could you please print a step-by-step guide to running a program that can only be loaded from the CLI?

The second request is again a step-by-step guide to salvaging a corrupt disk. I was in the process of saving a file to disk when some idiot blew the main circuit breakers and caused havoc on my data disk (you are quite right to be thinking 'I bet he didn't have a back-up copy').

Anyway, I eventually found about the only thing that would help me was the COPY command. It did, and now the entire (remaining) contents have been saved onto a new disk under one heading, and all the previous directories are now sub-directories. Everything used to be stored in drawers, now there isn't one in sight. Can you please help me to regain proper order on my disk.

Terry Evans, Cheltenha.

It just goes to reinforce the old proverb, "Thou shalt make backups", dunnit, huh? Don't despair, though. We'll be running a sort of "Guide to the CLI", appearing on a cover disk near you, soon! This should help with many of the basic problems often overlooked in over-techie books and letters pages.

Your second problem is slightly trickier. If power was shut off half-way through a disk access, it is highly likely that your disk is very badly corrupted. A simple COPY of all the data on the disk is next to useless. What you need to do is use the AmigaDOS DISKDOCTOR command (from CLI) or one of the many PD disk utilities, like DiskSalv. These will read as much as they can from the disk and erase what they cannot, then replace the old files with the newly checked and operational ones. The AmigaDOS command concerned is:

DISKDOCTOR DRIVE DF0:
(if you're using the internal drive)

The utility will then prompt you through the operation, which doesn't take too long, and report on any corrupted files or track errors it finds. If you COPY what's left to another disk, you should be able to access the files as icon files (those with the '.info' suffix) will also be DISKDOCTORed and then copied.

If, as you say, there are still no icons to be seen, drawers or otherwise, it just means you may have to re-organise your files in new directories. This can be a lengthy proces but you may not have much choice in the matter. If you do have to re-structure your files, I would refer you to the PD programs SID and IconMaster, both of which are readily available from any PD library and both of which have appeared on our cover disk at one time or another.

Idiot's guide?

As a subscriber to *Amiga Computing*, I write to ask if you would be kind enough to post to me an idiot's guide in the form of a set of instructions on how to install the virus-killers on your November cover disk into a startup-sequence? The instructions in the Amiga manual are by no means adequate for someone with my lack of technical knowledge.

Derek C Robinson, Barton-under-Needwood

The Amiga manual is inadequate for anyone with any level of technical knowledge! It is, how shall we say it, utter crap. The first step is to use a text editor to get the startup-sequence on screen. The ED or MEMACS utilities supplied with Workbench are sufficient, but there are plenty of superior PD editors such as JED.

Using an editor you insert a line with 'VirusX' into the sequence somewhere before the command 'loadwb', then copy the VirusX program into your C: directory using the RENAME or COPY commands, or a PD utility such as SID.

When you next boot from the disk, VirusX will run itself as the disk is loading and check all disks currently inserted in drives (including its own). It will then appear as a small window in the menu bar and will carry on automatically checking all new disks.

To get the KV utility to work, you must also copy it into the C: directory, as it will not run from the Workbench. Once you copy it to C: just follow the directions in KV.DOC (see the VIRUSX401 drawer) to find out what syntax and parameters it uses.

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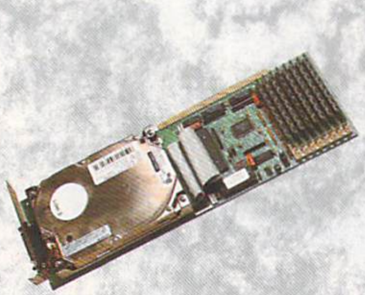
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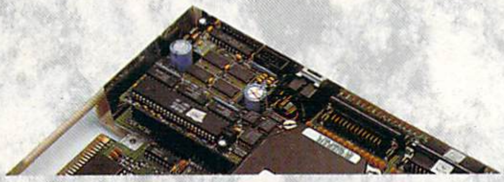
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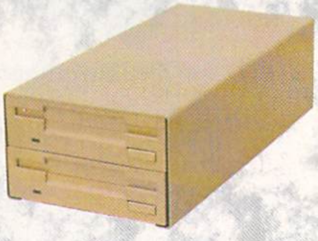
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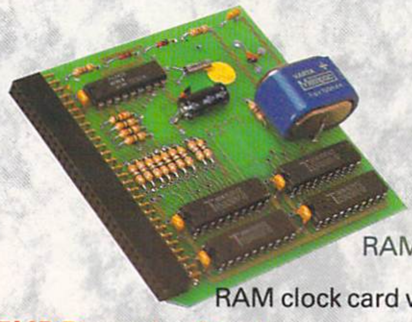
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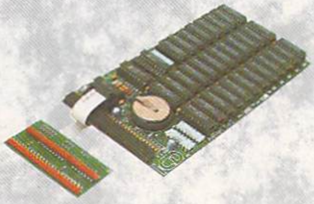
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